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THE REALM OF PERCEPTION

ZOHRA SAIYIDAIN

INDIAN INSTITUTE OF ADVANCED STUDY • SIMLA
1970

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Zohra Saiyidain has had a distinguished academic career. She took her B.A. degree from the University of Bombay in the first class, securing the first position in the University, and repeated the same high performance in her M.A. (Philosophy) Examination. She carried on research on the Philosophy of Bertrand Russell for over two years under Professor N. V. Banerjee of the University of Delhi and then proceeded, on a Government of India Scholarship, to the Cambridge University where she took the research degree of M.Litt. on a thesis on the *Sense Data Theory in Contemporary British Philosophy*.

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TO

MY FATHER

KHWAJA GHULAM SAIYIDAIN

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PREFACE

There had been, in the recent past, considerable controversy over the problems regarding the nature of our sensory experience of the external world and the foundations of empirical knowledge. The controversy seems to have subsided now. It seems to be generally accepted that such issues are more or less solved by, or dissolved in, the contemporary linguistic approach, in the sense that there is no more need for the kind of discussions that once were being indulged in, because the very questions raised were not genuine. The genuine and important question is no longer, whether we perceive the external world directly or not, but what we talk and how we talk about our perception of the external world. This approach, it is agreed, illuminates the nature of the problem under discussion. I feel that, despite the truth of this statement, the problem has not been fully or finally answered by the contemporary approach. After all is said, something still remains to be said (and this also applies to what I am going to say!). In this treatise I have made an attempt to say something which, I venture to think, still remained to be said.

This treatise, in its original form, was completed seven years ago, and I still retain its fundamental point of view. But seven years is a long time to retain the same style and treatment in handling any philosophical subject. Its subject, which is the nature of our sensory experience, has been dealt with internally, with a view to develop a sound and consistent theory of our sense-experience which could stand the criticisms made in modern times, most of which, I feel, can be handled now. If rewritten, its treatment and plan would have been perhaps very different. Now, it is to be taken as a defence and a

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consistent working out of the much criticized sense-data theory. It was a great temptation for me to drop the word "sense-data" altogether, owing to the widespread criticism of the name, the notion, the character and the status of sense-data. I think one can accept the theory without the name. In any case, I decided to retain it not only because this is the real topic of the book, but also because I owe a great debt of insight in the nature of the problem to the sense-data philosophers. Thus I fully acknowledge their debt, despite the many criticisms that the book contains.

There is one exception that should be mentioned. The treatise does not contain any reference to Austin's *Sense and Sensibilia,* because it was published later. But I believe that there is not much in Austin which would fundamentally clash with it, because most of the criticisms (and other modern criticisms) are based on the issue of the language of sense-data. I have argued that linguistic questions are only part of the story of sense-data; ultimately this is not a purely linguistic question but a factual one. So the admission of linguistic difficulties, or linguistic non-usage does not altogether destroy the theory.

Now, a word about what *factual* as against linguistic means. The main criticism (simplified here) is that there is no ordinary usage for the term and that it makes no difference to our life or experience whether we describe the experience in terms of sense-data or not. This way of describing creates more difficulties than it solves. At best, as for Ayer, it is to be taken as a question of linguistic preference for certain reasons. I have tried to argue that, by examining and manipulating the linguistic usages alone, one cannot hope to solve the controversy whether we perceive physical objects directly (what are the criteria for anything to be a physical object ?) or only sense-data. Nor can it be solved on the theory of verifiability. But in view of the privacy and fragmentariness

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of our sense-experience, which are undeniable 'facts', the question whether it consists of sense-data or not can only be finally answered by considering the evidence presented by 'facts' of experience, by scientific 'facts', and arguments from many other quarters, and not only by studying the usages of the words "see", "perceive", "touch", etc.

In this treatise I have tried to view this question on similar lines, and have, therefore, treated the evidential questions, the verbal or linguistic questions and the factual questions separately, hoping to bring out this point clearly. The last part deals with the specific issue of the sense-data theory and the general question of the contemporary linguistic approach.

The basic structure of this book was prepared as an M.Litt. thesis for the University of Cambridge. I am deeply grateful to Dr. A. C. Ewing for his constant and gentle guidance during my graduate years there. I also wish to acknowledge my debt to Mr. Jonathan Bennett for his many helpful criticisms on some parts of the work. I cannot, however, adequately express my gratitude to Professor Niharranjan Ray, whose interest has made the revision and finally the publication of this book possible. As Director, he offered me the facilities of the scenic Indian Institute of Advanced Study in the Himalayan mountains at Simla, and as a personal friend his concern and inspiration has been my encouragement and my conscience throughout.

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Chapter 1

THE PROBLEM OF PERCEPTION

The problem of perception has been the subject of philosophical interest and inquiry from the beginning of philosophy. Philosophers have attempted to solve it in a number of different ways. What are the problems of perception? First, the question arises, perception of what?, that is, what do we perceive?, and the allied question, how do we perceive whatever we do perceive? The first question concerns the nature of the world of perception and the second refers to the processes by which we come to perceive.

The smooth, easy-going answer of the common sense is that we perceive the external physical world in general, and tables and chairs, and trees and houses in particular, *directly*, by means of our five senses, where directly means that we open our eyes and they are there before us; we stretch our hand and we are touching them. Now these objects are supposed, by common sense, to possess certain spatial and temporal properties, and to persist unperceived exactly as we see them. They are also regarded as public, common and neutral among different observers and among different senses of the same observer. This is called the direct theory of perception of the external world, held unthinkingly by common sense, and very often defended by the philosophers.

Now this straightforward, direct account of the perception of the external world does well for practical purposes only, as long as we are said to be perceiving anything under what we call normal conditions, and in homogeneous media. For

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example, if we see a book lying three feet away from us, with perfect eyesight under broad daylight, it raises no practical difficulties. But it does not seem to meet all cases of perception, namely, perspectival distortions, illusions, hallucinations, dreams, etc. These experiences are "cases of perception" because, in these experiences, the person concerned seems to perceive directly objects which are qualitatively similar to those which we perceive in veridical perception. It is only later that he learns that there were either no physical objects at all, or they were different from what he perceived.

What is the problem there? The physical objects are supposed, by common sense, to have one shape, size and colour, and remain constant. But perception in perspective unrolls before us innumerable shapes and sizes and colours, of what we call the same object. Perception through different media presents hundreds of distorted, moving, discoloured appearances to us. All these cases contradict the commonsense belief in the direct perception of the unchanging physical objects. The puzzling feature of such vision in perspective is that these appearances seem to change not only with the changes in the physical world, but with changes in us, that is, in our bodily position and angle, our sensory and cerebral apparatus and our psychological states. So one wonders what goes on in the world. Do we, by moving away, turning our head, removing our spectacles, etc., produce changes in the world of physical objects? We notice, for example, that the two rows of trees on either side of an avenue look converging at the far end. But as we move along, they continuously seem to grow apart and become parallel. Do we change the shape of the avenue, the location of the trees, by walking along, or is the avenue itself both converging and parallel at the same time? What is the real shape of the avenue? If it is really parallel, what is the converging shape which can also be photographed exactly as we see it?

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Now, the question is this: if common sense is right in saying that we perceive the physical world directly by means of our sense organs, then either (a) common sense is wrong in supposing that physical objects have one shape, size, colour, etc., or (b) all these different, changing appearances we see directly are *not* physical.

This, however, is not the only problem. We seem to perceive similar objects in such cases which are called illusions, hallucinations, dreams, hypnosis, or when we are under the effect of drugs. Even common sense admits that the objects seen here are not physical objects, yet they are very much like physical objects; and, as far as certainty of the moment goes, we cannot distinguish between our normal and illusory experiences. Such similarity with and indistinguishability from the cases of normal perception is again inexplicable on the direct theory of perception of physical world, and it suggests that either all these illusory appearances are also physical, or even in the cases of normal perception what we perceive is not physical, and that our sense organs are not reliable as far as they claim to give us a direct view of the external physical world.

Such are the problems of perception which have constituted philosopher's difficulties, and on reflection we realize that they are not pseudo-problems. They rightly and justifiably demand a solution. The problem actually is two-edged. It is not only the question of the nature and reality of the universe of our direct perception and the processes by which we perceive it which is baffling, but also the fact that, in spite of all these different appearances, illusions and errors, common sense is somehow able to carry on life, predict future phenomena and manage in a way which is biologically advantageous to us. These facts seem to make no practical difference; in fact normally they go unnoticed. But this cannot be, and has never been, an excuse for a philosopher to ignore the

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theoretical importance of the problems they create and the doubt that they cast, and the light that they throw on the nature of the physical universe. So the task before the philosophy of perception is to explain both aspects of the problem, that is, (1) what are these changing appearances, both the so-called normal ones and the illusory ones, and (2) how is common sense able to arrive at the notion of one physical world with all those characteristics which are supposed to belong to it, when our single experience reveals to us only momentary appearances ?

One of the characteristic answers given, in modern times, is in terms of sense-data theory. This book is an attempt to understand, analyse and assess this theory in detail.

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PART I

EVIDENTIAL

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CHAPTER 2

THE PROBLEM OF SENSE-DATA

IN HISTORICAL PERSPECTIVE

In the preceding chapter we outlined the kinds of problems that are created by the phenomenon of perception. These problems assume a great importance for the philosopher, when we look upon perception not as a psychological process but as furnishing the only universally acknowledged link between the human mind and the external world. Whether we use terms like ego or self or soul or subject, whether we prefer to say the material world, or physical world, or object or nature, the core of the issue remains the same, namely, that it is in perception alone that the external world primarily confronts, and gets known to us. That to the ordinary man perception raises no issues is not in itself surprising — after all, what could be more natural to him than 'man' 'looking at' 'the world'. But a closer scrutiny and the subsequent philosophical inquiry into these three familiar notions set us wondering about the nature of the world (which our perception reveals to us), and present us with the host of problems already sketched.

For the philosopher, these problems arise from the polarity, which is assumed to exist between the two main pillars (or assumptions) on which these problems rest, namely, the human mind and the external world. The difficulty here is that the mind supposedly being an active conscious agency, and the external material world being the opposite, how is this link established in, what is called, the perceptual awareness leading to empirical knowledge? Different answers have been given to this

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question by different philosophers throughout the history of philosophy. These answers have differed accordingly as they were determined by the dominant interest of the philosopher in question, in exploring one or the other of these two assumptions; or the third issue, namely, the process of confrontation, the link itself. Thus it is in the interest of these three broad philosophical issues, namely, the human mind, the external world and the processes of perception, that philosophy has come to concern itself with the problems of perception.

Historically speaking,[1] the earliest interests in perception were purely physiological. But as philosophical inquiry advanced, real philosophical attention was directed towards perception and it came to be studied not physiologically but as a function of the mind itself. So its study became subservient to the *philosophy* of mind. Much later, about the seventeenth century, a different question was raised which concerned the *processes* of perception and it gave rise to certain psychological inquiries into such epistemological issues as the certainty and validity of knowledge acquired by means of sense-perception, for instance. It was only in the nineteenth and twentieth centuries that psychological and epistemological issues were clearly distinguished, and philosophers became interested, mainly under the influence of modern science, in perception as a source of the inquiry into the nature and reality of the universe. In the historical perspective then, we can understand the development of the philosophy of perception as broadly connected with three main issues respectively: (1) the philosophy of the mind, (2) psychological inquiries, and (3) the nature of reality.

Now, we must realize at the very beginning that any attempt at giving even a brief account of the history of any philosophical problem must set its own limits. There has to be, owing to the vast areas of time to be covered, a necessary over-simplification of the problems and theories. So it is possible to deal only with

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broad and salient issues as discussed in the works of few chief philosophical figures, leaving out the detailed accounts as irrelevant for such a purpose. However irksome it may be, such a procedure becomes unavoidable, and has to be reckoned with. Moreover, at the risk of being repetitive, I have tried to trace the similarities in the philosophical views on perception, throughout the history of philosophy, with a definite purpose. I want to bring out and emphasize the fact that the thread of the same problem and its similar solutions run throughout its history, to be broken into a new solution by the twentieth-century sense-data philosophers. I am referring to the fact that all along (with the exception of the atomists) no matter what metaphysical theory of reality was prevalent, no matter what terms were used, the perceptual universe was regarded by philosophers as mental. Whether it was supposed to be a universal or particular, an image or idea, the object of sense-perception was always taken as mental in nature. Once we accept the universe of perception to be so, then, on dualism, perception is inexplicable owing to the impossibility of any interaction. On some kind of idealism, perception — as perception which is distinct from an act of thinking — is again inexplicable. Moreover, perception as a source of knowledge was considered either inadequate or leading to scepticism. I have attempted to show, in historical perspective, that it is the sense-data theory which can be made to yield a new and convincing answer to the problems outlined in the first chapter.

THE CLASSICAL AND THE MEDIEVAL PERIOD

The early Greek thinkers took it for granted that we were directly aware of the world around us, which consisted of things. The term they used for the perception of the world was 'aesthesis', a general term which covered sensation, perception, sense-qualities, sense-organs, and sense-faculty. They had no

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discernment of the subtle distinctions that one makes between the sensible qualities, properties of things, sensations, etc. Where we talk of sensible qualities, like hot and cold, hard and soft, they talked of things. The reason why they made no distinction between the nature of sensible qualities and the nature of things (a distinction which the philosophical inquiry reveals) was due to the fact that they were not interested in the real epistemological or psychological issues, but only in the problems of reality and change. Secondly, at that stage, they had no words at their disposal which could contain these conceptual distinctions. Plato and Aristotle showed some sensitiveness to this distinction, but they had not fully grasped it. The pre-Socratic philosophers' account of perception was physiological and casual in nature; they thought that the images or effluences from the atoms of the object met through sense-organs, the soul atoms and caused the perception of the objects. This was not very enlightening as to the nature of perception itself.

It was the Sophists who, for the first time, raised real epistemological issues, because they shifted their attention from nature to man, and discovered the problem of relativity and subjectivity of knowledge. How much of what we know, they asked, was due to man himself and how much of it was contributed by the external objects ? Their conclusion was that all perception was subjective, therefore, it was relative. Since we could not go beyond our perception (aesthesis), we must rest content with the knowledge that our senses supplied to us. This knowledge was, therefore, relative to the perceiver. Hence man was the measure of all things.

The philosophy of Socrates and Plato was a measure to meet this devastating conclusion of the Sophists. Socrates, not interested in sense-perception, but only in contending with the problem of the relativity of knowledge, placed real knowledge in universal eternal concepts or essences. Plato, under the influence of Socrates (and also under the Eleatic view that

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reality could not change or be imperfect), bestowed metaphysical reality on these concepts, in terms of 'Ideas' or 'Forms' — real, eternal, immutable, universal, perfect and subsisting independently of the world of everyday perception. The empirical world then became only a shadow or a copy of the real world of Forms. Here, we find the beginnings of Idealism since these Forms were considered to be the real objects of knowledge to be grasped by reason alone.

Plato was not interested in the objects of perception for their own sake, but only as instances of the 'Ideas'. He introduced a distinction[2] between knowledge and ignorance, an intermediate state between them being opinion. The object of opinion was the sensible or perceptual world. Now, Sophist had placed all knowledge in perception or 'aesthesis'. Since all perception was relative and subjective, knowledge by aesthesis also became subjective. In *Theatetus* Plato examined the Sophist view at some length: everything was as it appeared to man, so it followed that aesthesis was an incorrigible awareness of things to man. To this he added the Heraclitan doctrine of flux, and as a result, all empirical judgements became relative. This conclusion was further supported by Empedocle's views regarding the causal factors in perception, namely, that the meeting of the motion of the eye with that of an object produced a sensible quality. Hence, Plato concluded, that all sensible qualities were relative to man.

Now, though this was the classical Platonic view on perception, we know that his main concern was not with perception of the empirical world but with the knowledge of Eternal Forms, known by the mind alone. Hence he refuted the Sophist identification of knowledge with aesthesis by certain arguments, to show that real knowledge could not lie in aesthesis alone. Even in empirical knowledge the mind plays a role by linking aesthesis with judgement. According

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to him, the Sophist view was self-refuting. He also pointed out that experts in every field could decide between the dispute regarding objects of perception. Moreover, he argued that certain properties of things, as for example, their identity, their existence, and difference from other objects could only be the result of comparison by the mind in a judgement and not of the function of aesthesis alone. In this way Plato introduced judgement in perception itself.

He used the term 'aesthesis' in a special sense. To have aesthesis was to have awareness of a sensible object, an impression. It resembled the notion of sense-data in the sense that as they were caused, they were passive, and they also afforded some knowledge of the empirical world. But for Plato this was no true knowledge. Hence his conclusions did not concern the nature of the perceptual world but emphasized the role of the mind in the act of judgement in perception. Yet the problem of the relation between the passive impression which was caused, and the activity of the mind in judgement remained (which was a special form of the general difficulty called mind-body problem), confronting all those theories which like Plato maintained a sharp distinction between the mind and the body.

Like Plato, Aristotle also believed that true knowledge consisted of universals. Particulars could only be known as instances of the universal. But unlike Plato, Aristotle's universals were inherent in particulars. Knowledge depended ultimately on mind's (or soul's) reception of a universal *form*. The soul was not a distinct spiritual entity, but a set of faculties, possessed by the body, in so far as it had organs to manifest them.

Aristotle's interest in epistemology was mainly due to his theory of mind and its faculties. Sense-perception was one faculty of the soul. Perception, according to him,[3] took place when things around affected us, and the soul received a sensible form, or quality of the thing without the matter, through

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the proper sense-organ. Thus the object of our perception was a *sensible form*, a universal in particular, a quality. Aristotle also regarded perception as the actualization of the potentiality which the sense-organs possessed as their capacity. Sense-organs were potentially what the object was actually; they assumed the quality of the object, as for example, the hand became warm when it touched a hot object. Things themselves were incidental and not essential to perception. Thus Aristotle maintained a distinction between the effect of the objects or 'pathos' and the objects. The objects were not directly perceptible, therefore, it was possible to make mistakes about them. But our senses never made mistakes about the 'pathos', that is, about effects of the objects on us. The sense-awareness then must be incorrigible, as the soul received the sensible form passively, and the question of mistake did not arise at that stage.

But this is only a passive account of perception. Aristotle also stressed the part played by the intellect, making judgement and discrimination in perception, and this links up with his philosophy of the mind or soul. Sense-perception was a lower function of the soul, leading to the higher one, namely, the intellect. Both perception and acquisition of intellectual knowledge were processes from potentiality to actuality; the intellect depended on sense-perception, in that the soul always thought in terms of images, supplied to it by perception. This was the basis of Aristotle's empiricism.

Now, there is a difficulty in the Aristotelian account of perception. As 'pathos' of the objects, it is passive, and as a lower function of the soul it is an active process, because it involves making empirical judgement and discrimination. This difficulty arises because, I think, Aristotle fails to distinguish different elements covered by the ambiguous term 'perception', such as the act of perception, the object of perception, the sensation, or the content of perception in some sense. It is important to know that this ambiguity has persisted throughout

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the history of philosophy as late as the end of the eighteenth century, and the distinction was left to be discovered by the philosophers of the nineteenth and twentieth centuries.

After Aristotle, the character of Greek philosophy changed owing to various political, economic and social causes, the conquest of Greek city states by the Romans being one of them. The aim of the Hellenistic philosophers was to give to man a way of life that would enable him to adjust himself to a hostile world. Therefore, the main feature of such a philosophy was extreme subjectivism, which was also reflected in its epistemological views. The three main schools, namely, the Epicureans, Stoics and Sceptics, were not only interested in the philosophy of mind, but also in real epistemological issues, that is, in whether and how perception provided knowledge of reality. They also dealt with the problems of the criterion of truth and the source of certainty of knowledge. The three schools centred their discussion around the concept of 'phantasia', a term used by them for sensory images or veridical perception or appearances or imagination, as opposed to 'phantasmata', that is, illusions and delusions.

The Epicureans were thorough-going atomists, and held that the 'phantasia' were caused when the soul atoms came directly in contact with the atoms of the object, which gave out film of atoms called 'Simulacra'. This was a passive process. Actual perception consisted in fitting of the phantasia in a general framework of images or ideas formed by repeated experience. This fitting in was the source of error; by themselves, they insisted, all 'phantasia' were veridical, incorrigible, reliable and were the ultimate standards of truth.

The Stoics, on the other hand, maintained an organic conception of a rational universe. The main concept of this school was intuition or apprehension, 'Katalepsis'. Like the atomists they regarded 'phantasia' which were opposed to 'phantasmata', as the effects (or impressions) of the external objects on the

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soul, which so changed the soul as to indicate their nature. They believed that phantasia were not necessarily veridical; indeed some might even be distorted. Only clear and distinct impressions were veridical. Whenever the impressions were passively received by the soul, the soul had to register them by an active process called 'assent' and they became known when the soul was gripped by them in apprehension or intuition. The error arose because of erroneous assent given by the soul, and also of distorted sensory images.

The Sceptics and the members of the New Academy were meanwhile attacking these two dogmatic schools. The contrast between their view and that of the Epicureans is worth noting. They accepted phantasia but tried to show that arguments from illusion proved that all phantasia were unreliable since they tended to give conflicting reports about the nature of reality; therefore, they should not be taken as signs of the existence of any hidden reality at all. There was nothing indeed beyond our perceptions. Thus the Hellenistic period ended in total scepticism concerning all knowledge.

It was only in the third century that Plotinus revived Plato and founded the school of Neo-Platonism. Like Plato, Plotinus also held that the Soul was supreme. The human soul was part of the cosmic Soul and extended its power in various bodily organs, which functioned as instruments for soul's activity in perception. He held that things *could not* affect the soul, hence perception of the world was indirect. The soul looked outward and read, as it were, the impressions through bodily organs, which were necessary for perception, so that perception could be distinguished from all other mental functions which required no bodily organs. The main function of the soul was to contemplate Forms (in Platonic sense). Here the same problem confronts us again: what is the relation between body whose organ must be affected in perception, and the activity of the soul?

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This is one of the issue which forms an important stage in the transition towards the Middle Ages. Neo-Platonic views of the *indirect* perception of the external world and its opposition to Aristotelian doctrine, that is, the soul receiving the sensible form *directly* without matter, gave rise to a long dispute regarding perception and empirical knowledge. St. Augustine derived his position from Plotinus and Thomas Aquinas, following Aristotle, put forward the rival view. Later, the issue was given over to the seventeenth- and eighteenth-century thinkers in more or less the same form.

Plotinus' philosophy, for many thinkers, had the power and the grandeur of a religious and a mystical system. As the interests of medieval philosophy were purely theological, its main aim was to establish the Christian faith with the help of a philosophical superstructure for the intelligentsia of the European world. St. Augustine saw a new salvation in the philosophy of Plotinus. Thus through him, Plotinus became a decisive element in the intellectual expression of the Christian faith during the Middle Ages.[4]

St. Augustine took it for granted, under the influence of Neo-Platonism, that knowledge, specially of God, was possible and that Scepticism was untenable. Like Plato, he too believed that the soul had its own functions and was *not directly* influenced by the objects. Perception was based on an impression produced in the mind when the body was affected by the object and it caused the attention of the mind to be heightened a sensation. But sense-perception for him also involved inferences. The soul made inferences about or subsumed the present impression under certain concepts. But these concepts were not empirical; they were Forms, *a priori*, that is, known independently of experience by the mind. To have concepts was to be aware of Forms in the Platonic sense, except that, for St. Augustine, Forms existed in the mind of God. He did not question whether what our senses told us was true or not, that is, whether the impression

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corresponded to the external objects or not. It was because he too was not interested in the real empirical question, but only in the theological knowledge and, like Locke, took the correspondence for granted.

At about the same time St. Thomas Aquinas, who was deeply influenced by Aristotle, put forward his version of Aristotelian philosophy. For St. Aquinas, sense-perception was a change in the sense-organs, when the soul received a *sensible form*, and got altered. In response to the stimulation of sense-organs, the faculty of perception actualized its potentiality and resulted in a change in spirit — by the production of sensory images or 'phantasmata', which corresponded to the external object. The phantasmata were like Locke's 'ideas', particular, passive, mental representations of the object. They were not objects of awareness to us, but were detectable only in isolation from the total experience. Perception, according to him, demanded an apprehension of the universals or qualities which were abstracted by active reason from these particular phantasmata, and then imposed as concepts on passive reason. Thus there was a connection between the sense and the intellect, and the essence of St. Aquinas' empiricism was that, according to him, all conceptual knowledge sprang from sense-experience.

Now, all these medieval theories of perception were representative theories. Mind, according to them, always received an image or impression, which was caused by and represented the external object. But, William of Occam asserted direct perception of particular things, and rejected the theory that mind received any universal sensible *form*. Mind grasped particular things in intuition directly. However, he believed that while all knowledge was direct and simple, all was not equally clear and distinct. Inner experience or self-knowledge was more clear and distinct than the knowledge of the external world. Thus he became the link which carried us to the modern period and to the philosophy of Descartes, who derived his view

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regarding the knowledge of mind and criterion of truth (as clear and distinct ideas) from William of Occam.

THE MODERN PERIOD

We have already noted that the primary concerns of medieval philosophy were theological in nature. Philosophy was only the dogmatic Christian theology, cloaked in logical, rationalistic arguments imposed on human mind. Human mind rebelled against such domination and started its journey on the way to free inquiry into the nature of truth with Socratic zeal and often with a Socratic fate ! Though the stirrings of independent thinking were found all along, this rebellious spirit found its full expression from the fourteenth century onwards, in all fields of human thought — sciences, arts, literature, philosophy, mystic pursuits, and life in general. All these areas of knowledge were not independent of each other; cross-currents of influence continually flew from one to the other. In the field of philosophy, it was the scientific temper of the age which determined the main character of the seventeenth- and eighteenth-century thinking.

The Modern period in philosophy started in early seventeenth century with Descartes' bold refusal to entertain any longer all those dogmatic beliefs with which his mind had been burdened by external authorities. Brought up in the scholastic tradition, and trained in mathematics, he developed a profound scepticism towards the former and respect for the latter. In a world of dogma and belief, he wanted to seek absolute certainty in philosophical knowledge, and the only absolute certainty he could find was in the mathematical knowledge. Thus, for Descartes, mathematics became the model, both for the kind of method philosophy must follow and the certainty which it must seek. Since mathematics was a rational concern, philosophical certainty must also satisfy the demands of reason, and rely on reason as the only source of true knowledge. This

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was the beginning of a conscious rationalistic trend in philosophy as a method of inquiry into the nature of truth.

As a reaction to Descartes' sole emphasis on reason, a rival view developed in England, namely, that it was not reason but sense-experience which was the only source of the knowledge of reality. Locke, the father of British empiricism, was not only opposed to the rationalistic deductive method, but also to the contention that all knowledge was innate *a' priori*. This philosophy arose mainly under the influence of the Newtonian physics, which, in addition to being a success in explaining the scientific reality, was also considered to have evolved a supreme method of inquiry. This method was incorporated in the works of Bacon and Hobbes. Locke also made a conscious application of it to the problems of philosophy. His aim was to delimit understanding by asking how far it could give us *certain* knowledge. So both the philosophies had the same aim, namely, the search for some certain, indubitable truths on which the structure of knowledge could be raised. The difference between them was that, whereas for the rationalists, these truths were to be found embedded in the nature of reason alone, the empiricist believed that they were discoverable through sense-experience. Let us briefly examine the philosophers of each school.

According to Descartes[5] the mind was a thinking substance, and whatever was in the mind as the object of its contemplation, including the sensible objects which were directly perceived, was called an 'idea'. Hence the objects of perception for him (and for the subsequent philosophers) were also 'ideas' (we shall refer to these as 'sense-ideas'). The Greek and medieval philosophers did not use the term 'idea' for the object of direct perception, but used 'aesthesis' or 'universal form', or 'phantasia' instead. The term 'idea' was common between the rationalist and the empiricist philosophers, and it served their purpose well; for it implied that the object for which this term stood was mental in

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nature. The objects of perception too, which were also called 'ideas', were in some sense mental. As to any existence outside the mind, different philosophers held different views.

For Descartes, there were two kinds of distinct finite substances—mind and matter, and an infinite substance, God. The knowledge of mind and its ideas was direct and immediate, and that of matter and God was inferred from these ideas. A sub-class of these ideas was adventitious ideas (that is, sense-ideas). They were passive, and as passive, he argued, they were caused by the material things, of which they were representations (at least of their mathematical properties) to the perceiving mind. Perception took place when the movement of light from the objects created a movement, through sense-organs in the brain and, as a result, ideas were produced in the mind.

Now, two questions arise. First, what is the guarantee that these passive ideas do really represent material things to us? Descartes brought in the veracity of God to answer this question. Since God was not a deceiver, He would not deceive Descartes into believing in the truth of those ideas which were clear and distinct to the understanding such as those of mathematical properties of things. Second, the mind and body being so distinct, how did the contact in perception actually take place? Descartes tried to explain it in terms of a gland in the brain called peneal gland where the soul contacted the body. Yet, *on dualism*, the difficulty still remains unsolved, that is, how did the contact between a physical gland and the spirit take place? This problem led to the further development of rationalistic philosophy.

Malebranche tried to solve this problem by bringing God closer to the world of mind and matter. He held that, on the occasion of the body being affected by external objects, God created sense-ideas in the mind, and *vice versa*. Hence there was no direct contact with or knowledge of matter.

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Perception consisted in ideas created by God which represented the effects of body to us.

Now, this close relationship between God and the world was, in Spinoza's philosophy, transformed into the identification of the three substances as One Divine Substance, with infinite number of attributes. The only known attributes of the substance were thought and extension, and they, according to Spinoza, could not interact. Hence perception could not be the result of mind passively receiving impressions from outside. There was only parallelism, that is, the reality completely and fully expressed itself both as the mind and its ideas, and also as body and its states. Hence Spinoza gave an ingenious account of perception,[6] that is, in perception also, the mind was involved in some form of thinking, but with inadequate ideas. Thus the difference between thinking and perception was only that in thinking the mind was active and had clear ideas, whereas in perception it was passive in relation to things, not because it was affected by the things, but because it had inadequate ideas. Sense-ideas were the inadequate 'conceptions' that the mind formed by itself, without the aid of external objects. Hence there was no adequate knowledge of things.

Both these points were further developed by Leibniz. First was the rejection of interaction between mind and body, but not for the reason that the mind and matter could not interact since in Leibniz's philosophy there was no material substance, but because, according to him, mind and mind could not interact. The other point was the distinction between activity and passivity of the mind as the only distinguishing mark of thought and perception.

For Leibniz, perception was not a specifically human characteristic but was a metaphysical one which, along with activity, characterized all the monads or spiritual substances. This metaphysical notion of perception referred to each monad's representation or mirroring of the multiplicity of monads in

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the unity of the simple soul. Since monads differed mainly according to their degree of clarity in perception, the human mind, which was the most developed monad, was capable of higher perceptions, self-awareness and all kinds of ideas which constituted knowledge. All knowledge was innate. Perception[7] for the human mind was having confused ideas. As they were confused they were passive, that is, the mind seemed to think that it was being affected and that they were being imposed from outside, whereas they were really its own confused ideas. In clear ideas, mind was active. But sense-perceptions presented the world to us confusedly as consisting of solid extended inactive matter, whereas, for Leibniz, reality consisted of countless simple active souls which only reason could reveal to us. Such a view formed the culmination of rationalistic philosophy.

The reaction against this view came in the form of empirical philosophy. But Locke, the first British empiricist, was not a thorough or consistent empiricist. His approach was no doubt empirical, but he did admit the existence of non-empirical elements — God and mental and material substance — in his philosophy, which could only be maintained on rationalistic grounds. Locke's enquiry was partly psychological, that is, how did ideas arise, and partly epistemological, that is, concerning the extent and certainty of knowledge. (As a result of his twin procedures, even today, the two issues get very often confused.)

While criticizing the rationalistic approach, Locke was unconsciously influenced by Descartes' views on perception. Locke also held the object of perception to be an 'idea', thereby indicating that it was mental in nature. Whatever came before the mind in thinking or contemplation was an idea. The basic mental contents were simple ideas, received through two sources. The first was sensation, which gave rise to what we call the ideas of sensible qualities of red, green, hot and cold, etc., and the second is reflection, which furnished the ideas of

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the inner states and operations of the mind. These simple ideas were representations of and caused by the material things in the mind. Some of them, that is, those of primary qualities, resembled the properties of matter, while those of the secondary qualities were merely sensations in us and had no corresponding properties in matter. These ideas could be combined in various ways into complex ideas, and knowledge arose when the mind perceived an agreement or disagreement between two or more ideas.

Now, Locke did not argue but took it for granted that the simple ideas were caused by and resembled material things; hence matter existed. It was on this point that Berkeley attacked Locke's notion of matter and cleared the way for idealism. He argued that no independent knowledge of the material substance was possible either through sensation or through causal inference by reason; thus it was unintelligible and, therefore, a non-entity. If we so rejected matter, all that we were left with was our sense-experience which for Berkeley too consisted of 'ideas', arising in the same way in the mind as for Locke. They were 'immediate object of sense or understanding'. They were not representations of any material reality, but were themselves real. Their existence consisted in being perceived by the mind; hence his famous contention, *esse est percipi*.[8] Arguing from the relativity of all sense-experience, he concluded that there was no distinction between primary and secondary qualities. Hence, all ideas were subjective. The order of nature, which we experience, consisted of such collection of ideas which we *call* commonsense things; and on Berkeleian philosophy these collections of ideas were 'in the mind'. Since these ideas 'were immediately perceived', it followed that sense-awareness could not be erroneous. All knowledge was founded on sense-experience which also furnished all the sources of certainty that knowledge required. Error arose only due to later judgement.

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This is only a phenomenalistic account of Berkeley's world, and it would have ended in phenomenalism but for his doctrine of the existence of spirits, both finite and infinite. Berkeley argued that these ideas were perceived passively by us, so they must be caused in us by an active, Infinite Spirit; hence such a Spirit existed as the cause of these ideas. Thus he too made a departure from the purely empiricistic principles.

Carrying the philosophy of empiricism to its logical conclusion, Hume further cleared it of the inconsistencies of Berkeley's philosophy, namely, of the existence of spirits, which on pure empiricism he could not logically hold. Hence all that Hume admitted[9] were 'perceptions of the mind', divided into impressions and their copies, namely, ideas. There was no existence beyond these perceptions; hence there was no question of their being representations of any reality. Since no amount of reasoning could justify the existence of an external world or spirit, we should not ask whether an external world existed or not. Yet, as there was this universal belief in the existence of an external world, the only answerable question was: How could we explain this belief in us? Hume explained it in psychological terms, that is, how we do come to believe that there was an external world. His explanation was that, due to such features of our perceptual experience as constancy and coherence of impressions, association of ideas and the use of our natural tendencies and imagination, we came to believe in the existence of an external world. It was natural and biologically advantageous for us to hold this belief, but there was no rational justification for it at all.

Hume's conclusions, it is well known, profoundly disturbed Kant in Germany, and led to an entirely new way of thinking in epistemology. Before Kant, the two parallel views of rationalism and empiricism were the dominant philosophies in

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the European continent and in England. As we saw the rationalists placed the source of all knowledge in the faculty of reason, while the empiricists attributed it to sense-experience. The rationalistic attempts ended in Spinoza's and Leibniz's grand metaphysical systems. But empirically these were not verifiable in the sense that there was no way to decide which of these could represent reality truly. Empiricism, on the other hand, ended in Humean scepticism and subjectivism. It was Kant, trained in Leibniz's rationalistic philosophy, and deeply perturbed by reading Hume's sceptical views in the *Inquiry*, who endeavoured to work out a synthesis of the rationalistic and empirical approaches in his *Critique of Pure Reason.*

Accepting Hume's view of impressions, Kant argued that all empirical knowledge was founded on subjective experience or sensations. They were caused by Noumena or unknown things-in-themselves. Now, sensations were passive and through them we knew appearances or intuitions. Intuition could be analysed into matter and form, of which only matter was provided in sensation since form could not be given in sensation. So form, that is, spatiotemporal character of the appearance, was imposed upon sensations by the sensibility (which possessed them *a' priori*) as it received the sensations. But matter and form of an intuition were separable in thought only.

Now, 'perception', according to Kant, was not a passive process. The synthesis of the manifold of appearances, to form the unity of an object, could not be the work of sensation alone; it was of the understanding, with its categorical structure, and of the imagination. There were various levels of syntheses. First, there was the three-fold synthesis where (a) the manifold must be apprehended in intuition; (b) it must be recollected in imagination; and (c) it must be recognized in a concept. To make this account objectively valid, Kant said that this synthesized manifold must be considered as united in an object, and, according to him, only understanding could give it a

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unity in the conception of an object. Moreover, it must also be unified as part of a consciousness. So 'I' accompanied all my perception, that is, they were *my* experiences. All appearances, then, could be considered as belonging to someone, and also as unified in an object. But neither the self nor the object of empirical knowledge were discoverable in sense-experience.

After Kant, Idealism in the nineteenth century began as a great force, when Fichte rejected Kant's concept of Noumena. If there was no external reality of any kind, then we were faced with subjective idealism. With Kantian Noumena causing sensations, it was possible to distinguish between the pure contents of the mind and the sense-experience of objects. In subjective idealism, the mind and the perceived phenomena became one in essence, and perception became a kind of mental activity, though distinct from other kinds of mental activity. How can, then, the two be distinguished? According to Hegel,[10] our basic experience was the apprehension of the immediate, 'the given' or of 'what is', that is, confrontation of the ego with 'something'. He held, as Aristotle had done earlier, that immediate knowledge was of 'universals' or of properties. To have even sense-knowledge, 'what *is*' must be subsumed under universal concepts. All words and thought expressed through them were general, even the words like 'here' and 'now' (though this was debatable). There were no words by means of which we could think of particulars. If so, we had then no knowledge of the particulars. Sense-knowledge, then, was not immediate, but was mediated knowledge by universal, of particulars. There was no way of grasping the particulars thus subsumed under concepts, except with reference to other concepts. Thus in sense-perception, it was the experience as a whole of whose existence we were assured. Later, Bradley,[11] the English Hegelian, held that the subject of every judgement was reality as a whole, and experience and reality were one.

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Hegel pointed out that, at the level of perception, certain contradictions existed between the fact that we seem to perceive unitary entities, and that their knowledge is acquired through a plurality of unconnected universals. This was the problem of the one and the many. This contradiction could only be resolved by the understanding which grasped forms, because it provided us with higher unconditional universals, that is, with the idea of law-likeness which stated connections and determined unity of the object. Perception alone could not grasp it, so the world of perception was not real; it was merely a world of conflicting appearances.

Now, from our point of view, the difficulty in Hegel-Bradleyan view is that, if there was no reality external to the mind and the only thing given on idealistic position was 'total experience', then, the distinction between perception and thought became meaningless.

THE BEGINNINGS OF THE CONTEMPORARY SITUATION

Just by about the end of the nineteenth century, there was a curious short spell of Hegelian idealism, through the philosophy of Bradley, McTaggart and Bosanquet, in the British Universities, which were dominated earlier by empiricism. The further development of the British philosophy of perception was a revolt against idealism, led by the two great twentieth-century thinkers Russell and Moore in their theory of sense-data. But there were other forces of philosophical thought at work too, indirectly influencing their views which eventually led to a break from the idealistic position of Bradley. These were sensationalism in the nineteenth century, and later a widespread reaction against it.

Sensationalism and its adjunct Associationism were prevalent during the first half of the nineteenth century, and were very popular as psychological explanations of all the contents of the human mind. Sense-experience, derived from sense-organs,

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was supposed to consist of a plurality of distinct sensations. This view confirmed Hume's psychological and epistemological atomism. Ideas of sense were simple elements in the mind, the complex intellectual knowledge being built out of these simple ones by a mechanical process called Association of ideas. Psychologists like Wundt, Helmhotz and Herring working on this theory gave complicated psychological accounts of various issues involved in it. James Mill tried to reduce all mental phenomena to atomic sensations and ideas associated with them. John Stuart Mill, too, reduced the knowledge of the physical objects to the awareness of sensations. His explanation, of why we believe in the existence of the external physical objects, was that because of our past repeated experience of sensations, we come to have expectations of having similar sensations in future. Thus physical objects in this view were no more than permanent possibilities of mental sensations. Phenomenalism could not be stated in a purer form.

Now, phenomenalism and idealism reduced all existence to our sensations or ideas which were mental. About the end of the nineteenth century, the reaction set in against such views from many quarters, on the Continent, in England and in America; indeed, twentieth-century philosophy moved more and more towards objectivity and realism. Twentieth-century realism took different forms with a single common aim, namely, to establish that what the mind perceived existed independently of the act of perception by which the mind knew it. This movement against the idealistic-phenomenalistic tendencies was led by two Continental philosophers, Brentano and Meinong; it was destined to influence recent discussions on sense-perceptions to a very great extent.

The empiricists had supposed that the characteristic mental phenomena were 'ideas', to which alone our experience was confined. Brentano's realism started by rejecting the assumption that to be 'mental' was to be an 'idea'. The characteristic feature

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of a mental phenomenon, according to him, was that it pointed towards an object or related to a content while the non-mental could not do so. Hence there must be a distinction between the act and object of perception. The object was not the Lockian idea, but that which the mind had before itself as the content of its act. But, in this view, a difficulty arises regarding the status of such objects. There are judgements where we deny the existence of something, as for example, the square circles. Yet the mental act of judging, in judgement we make about them, is real. The question was, How could a real judgement have an unreal content ?

Meinong started with this problem in view, and thought that Brentano had confused the object with the content. According to Meinong,[12] a psychical phenomenon contained three elements: the act, the content, and the object. It was usually an extended solid object that was before the mind, but this could not be the content, or the constituent of a mental act. Content was just an attribute of the mental act which enabled it to point to such-and-such an object, and not to any other. In thinking of a non-existent object, the act of thought did exist, though the object did not. But whatever was the part of the content of this act, must also exist. Some objects of mental acts actually did exist, as for example, red and green books. Other objects are real but do not exist, as for example, the difference between the red and green, or number 10. To such real non-existent objects, Meinong gave the name of 'subsisting' objects.

Now, Brentano's view led to the development of Husserl's phenomenology in Germany, and in England influenced Stout's views on perception. Though Stout mistrusted the notion of mental acts, yet he retained the distinction between the content and the object; these he termed respectively as 'thought reference' and 'presentations'. These were later re-termed as 'sensa' which were not regarded as mental, but as pointing towards the existence of a physical object.

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Stout was concerned with similar problems as Brentano and Meinong, and it is important to know that Stout was the teacher of both Russell and Moore at Cambridge. And it is with their views that our story of sense-data begins.

But before we relate this story we must realize that the attempt of sense-data theory to establish realism was one among several attempts made about the beginning of the twentieth century. Under the influence of Brentano, Meinong, Mach and Avenarius, Thomas Reid and William James, other movements such as those of new realism and critical realism, for instance, also arose with their advocates both in England and in America. New realism found its full expression in a cooperative volume *New Realism* with contributions from E. B. Holt, W. T. Marvin, W. P. Montague, R. B. Perry, W. B. Pitkin and E. G. Spaulding. Critical realism, which was a counter-blast against new realism, also received a similar treatment in a book to which seven philosophers contributed; they were, D. Drake, Lovejoy, J. B. Pratt, A. K. Rogers, G. Santayana, R. W. Sellers and C. A. Strong. In England, Cook Wilson, H. A. Prichard, W. B. Joseph and Samuel Alexander were stating their case against idealism. Though all these theories were different in details, yet there were common points of agreement and influence, and all of them tried to establish the same view that the objects of our perception were not ideas, that is, not mental. For the new realists they were real, objective, particular neutral existents, in terms of which the world of matter and mind was to be explained. But on this theory certain problems regarding error and illusions remained unsolved. So the critical realists rejected the neo-realists' doctrine of particular neutral existents, and held that our immediate data of perception consisted not of existents but of 'subsistents', logical, universal, character-complexes. For the sense-data theory the objects of immediate and direct perception were short-lived, private, fragmentary, particular entities,

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which were not simply mental or physical but related to both at once.

In the year 1903, Moore wrote an article called "The Refutation of Idealism", and in 1912 was published Russell's *Problems of Philosophy*. Both of them had their earlier philosophical training in idealism. But in these two publications, they argued that the word 'idea' as it was used by the Berkeleian idealists was an ambiguous term, and the view, "*esse est percipi*", was based on a confusion. This realization convinced them that idealism was untenable. In their own terminology, they asserted that there was a distinction between the two elements that an 'idea' contained, namely, between the act of apprehension or the awareness which was mental and the *object* of this awareness which was not mental. This *distinct object* they called a sense-datum.

The early formulation of the theory is to be found in the early works of Russell and Moore, and its further development, in their various books and articles, written from time to time. Broad, who thinks that the theory is highly plausible, and Price both have devoted a great deal of time and thought to a very detailed and thorough development of the subject. Many novel suggestions and their further development are found in some of Ewing's works. Now, these philosophers have regarded the question of sense-data as a question dealing with a sort of entity or object, different from physical object, inhabiting our perceptual world. But with the interest of the linguistic philosophers, and mainly of Ayer, in the subject, the theory gets a highly original, completely different, swing, that is, instead of being regarded as a theory to explain the nature of our perceptual world and its relation to the mind and the physical reality, it came to be regarded as a language, alternative to our

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ordinary physical object language. Its purpose was to enable us to talk about the physical objects in terms of our sense-data by translating the physical object statements into sense-data statements. This view radically changes the status of sense-data in the world, in fact the very notion of the physical world.

What is this theory that we shall be attempting to examine in this book? It is not possible to give an account of it, even in an outline, since it is vast and complicated and subject to many different versions; some previous knowledge of this theory is anyhow presupposed in this book. I can only frame such questions which, I think, form the development of the theory, and which I shall be attempting to discuss and answer in the course of this work.

(1) The main problem before the philosophers was — What is it that we perceive immediately?

The simple answer of common sense, namely, that we perceive physical objects, could not account for all the cases of perceptions. There are arguments to prove that we do not perceive the physical reality directly and immediately but only our sense-data, which are not mental sensations or ideas.

(2) What is the nature of these sense-data? The answer is, they are short-lived, private, fragmentary particulars dependent on the percipient as well as on the external reality. If so, then the discussion of the theory would centre round the following questions.

(3) As such particulars, do they or do they not exist unsensed, that is, in the absence of the percipient?

(4) As such particulars, do they or do they not have characteristics different from what they appear to have; or, in other words, are statements concerning them absolutely certain, or incorrigible?

(5) As private fragmentary particulars appearing to the percipient, in what relation do they stand to the percipient? and,

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(6) Since they are generally regarded as the 'appearances' of a 'physical object' (both expressions being highly ambiguous), in what relation do they stand to the physical world ?

(7) When we say that "we do not perceive physical objects but our sense-data", are we stating an actual fact regarding the existing world or are we only speaking about the same things in an alternative language for certain reasons ?

Now, except for the meaning of the term sense-data philosophers have mostly differed about all the other questions. These differences in the views have given rise to many criticisms, an important one being, how can the theory be sound when even its advocates disagree among themselves.

This book attempts a critical evaluation of the sense-data theory, and the conclusion reached is that the theory is sound in its fundamental features. The criticisms against the theory can be answered and it need not end in scepticism or solipsism. So in the pages that follow, I have attempted to develop a consistent view out of the conflicting versions of the theory.

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Chapter 3

ARE SENSE-DATA NECESSARY?

In the last chapter, we have briefly seen what sense-data (as opposed to the physical objects) mean. They are appearances of what *we* call physical objects; they are short-lived, fragmentary, private and dependent on the percipient for their existence and persistence. Before we undertake to study the detailed meaning of the term 'sense-data', we must first ask "Are sense-data necessary?". This question is of utmost importance, because recently the theory has been subjected to many criticisms. It has been contended that the very notion of sense-data is illegitimate, the approach to the phenomenon of perception, that is, the analytical approach, is wrong, and the evidence does not guarantee the conclusion. If this were to be the case, then any further questions as to the nature and meaning of sense-data and their relations to the physical world would not arise at all. Hence, it is important to ascertain at the very outset (and that is how this question "Are sense-data necessary?" is to be interpreted) whether there are any very compelling reasons which force philosophers to reject naive-realism and postulate sense-data. What is the evidence on which this conclusion — that we directly sense only our sense-data — is based?

Certain arguments, some of which are commonly known as the Arguments from Illusion, are supposed to refute what may be called the plain man's thesis or naive-realism, and pave the way for the sense-data theory. What is the plain man's thesis? In technical language, his belief can be stated as the visual and tactual sense-data (or appearances) are parts of the

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surfaces of physical objects. Do the arguments from illusions refute it, and if so, in what sense? In believing this, he believes (or holds or takes it for granted) that this particular red hard surface (called the surface of the book) which he sees, will remain the same when unperceived, just as he sees it. Moreover, he believes that many different persons perceive numerically the same object when they are supposed to be looking at or touching something. All these beliefs, if nothing else, are refuted by the arguments from illusion and other arguments. These arguments need not claim to refute direct perception of physical objects on any other interpretation of the physical objects (as for example, the phenomenalistic interpretation) but, on the common sense meaning of physical objects, they are supposed to prove that we do not perceive the physical objects directly. In this chapter the terms 'perceive', 'see', 'sense' will be used indifferently. These distinctions will be clarified in the next chapter.

What are these arguments which threaten the simple direct view of common sense? They are of two types: (1) the arguments from Illusions and Hallucinations, and (2) the arguments from Science. The first ones are more controversial and so we shall discuss them at some length.

I. The term 'Arguments from Arguments' and 'illusion' have been used as a general name to cover different cases of certain perceptual experiences, namely,

1. Perspectival distortion, or relativity of sense-perception,
2. Casual arguments,
3. Illusion,
4. Hallucinations and dreams.

Let us first examine the argument from what may be called 'perspectival illusion' or 'relativity of sense-experience'. In general, the relativity of sense-experience means that the different shapes and sizes and colours of an object that we perceive seem to change with the changes in our point of view or

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depend on our perspective. Russell[1] illustrates it by the example of an observer watching a table, and shows how, from different angles (if he moves round the table) and under different conditions (as for example, if the light changes or the table is turned), each of the appearance of the table he sees will be different from the other. Moreover, if A stands at a particular point and watches the table, the table, so to say, presents one appearance to A. If B, at the same time, moves round it, he will see changing appearances. Now all these appearances cannot be *the* one unchanging table. How can the same table be of so many shapes, colours and sizes ? Or, worse still, how can the same table remain constant and change at the same time as related to the perceptions of A and B ? Obviously it cannot, whereas the appearances that A and B see undeniably change. So, in perceiving these appearances, it seems obvious that it is not the unchanging, public, physical table which we are perceiving.

Then we also note that objects seen at great distances always appear smaller in size, flatter in detail, and generally blurred. If they are seen through fog, rain, dirty window panes, smoke, haze, microscope or telescope, they appear distorted, moving, discoloured, magnified, etc. If they are seen under changing lights, their colour will be different. These and such other innumerable facts go to show that all these changing appearances we see, cannot be physical, as the physical objects are supposed to have one colour, shape and size and remain constant. It follows that in perceiving such appearances, we never perceive the real physical object directly, if there is one.

The first objection to this argument is that all these appearances are merely subjective — mere 'appearances'—and not physical objects, so why bother about them ? But the question arises, in what sense are they subjective ? If it means that they are somehow inside us, it does not seem to be true. Whatever be the ultimate status of these appearances, for us,

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from an epistemological point of view, they are objective. We can arrange conditions to make experiments, as for example, if we see a house from ten feet away, we shall see an appearance of a certain size. If we move back, the size will grow visibly smaller and the details will be wiped out; as we move again towards the house, it will be found to be restored to its original size. As many times as we throw a stick in the water, it will appear bent. The finest proof of objectivity of such perspectival distortions is that they can be photographed by cameras, recorded by other instruments, almost exactly as they appear to the human eye, ear, etc. If these appearances are all *we* see about the external world, and if they are to be called subjective, we cannot break away from subjectivity in this sense.

Another objection is that these appearances are merely 'ways of apprehending' objects, and not themselves existent objects. D. Hicks[2] thinks that the variety of conditions are imposed on real things because they are in space; the space imposes these conditions. Now, even if this could be true in the case of perception of objects in spatial media, what about those cases which turn out to be the cases of complete hallucination or double vision, where there is either no physical object to appear, or one physical object seems to appear to be two?

Next, it might be said that even if we grant that the physical object is not seen as it is in all these appearances, there may be at least one special appearance in which the physical object is seen as it is, that is, we could maintain that from one particular angle we see an appearance, and the size, shape and colour of it is the real size, shape and colour of the physical object. But the question then is, which one and from which particular angle? What is the criterion to distinguish, in a series of continuous appearances, this privileged appearance in which the physical object is seen as it is? Suppose we view a tree from a considerable distance. What we see is a small appearance in which all the branches and leaves are indeterminate.

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As we move nearer, the size will enlarge and the successive appearances will be more and more differentiated. Yet at which precise point do we see the real physical tree, as opposed to these various changing appearances? The different stages of the transition from one appearance to another are so gradual and continuous, and one stage is qualitatively so indistinguishable from the next, that it contains no hint of such a great difference of kind as between an illusory and the real shape of the object. So the conclusion is that empirically we are in an interesting situation in which even if, from a particular angle, we do see the physical object directly, we cannot know that we do so. (But further considerations will show that even this alternative is not available.)

A further attempt at defending this naive-realistic position consists in granting that we do not perceive the physical object directly by sight, but we sometimes do so by touch.[3] This is not acceptable either, because touch is also relative, though a little more reliable than sight. The reason why touch has been emphasized is that in determining shapes by touch we generally do not go wrong. But this is not conclusive. There are illusions of touch, such as the temperature of the water feels different to the hand accordingly as the hand is hot or cold, or numb. Then there are other illusions of touch, such as the feeling of pressure persisting after the physical pressure is removed, or the feeling of pain in amputated limbs, which is called the 'phantom limb phenomena' in medical language. So even in the matter of touch we cannot say that we are always in direct contact with the real physical object. Directly we are only aware of our tactual sense-data. There is evidence from the medical sciences and physiological investigations that even our perceptual body cannot be taken as identical with the physical body.

The last objection to the argument from perspectival illusion is a recent one. Professor Ayer argues[4] that this argument

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does not prove the conclusion — namely, that we do not perceive the physical objects directly — simply on the ground that there are so many inconsistent appearances, all of which cannot be the same physical object. Naive-realism, according to him, is not necessarily false. There is no contradiction at the level of facts (that is, as far as our sense-experience is concerned). The elliptical shape and the circular shape of a coin both exist. It is the 'assumption' as to what the same physical object, for example, a coin is, which gives rise to the contradiction. Why should we assume, he asks, that the physical object does not change its shape when we move round it? Or why should we think that it exists independently of our observation? If a person was prepared to say that the physical object changes with changes in the observer, or has inconsistent properties, or is seen even when it does not exist, we could not logically refute him, because he refers to the same facts, namely, to the appearances we directly perceive. The only difference is that he is not making these 'assumptions', namely, that the physical objects do not change. Thus the question — whether we see physical objects directly or not — is merely a question of the way in which we choose to describe these facts, or the language we use, and not a factual question at all.

The first thing in answer to this objection is to notice that the arguments from perspectival illusion mean to refute *naive-realistic* belief in the direct perception of common sense physical objects. The belief in the persistence and constancy of physical object goes into the very meaning of the ordinary notion of the physical object. Ayer's suggested interpretation of the term physical object, namely, as changing its shape and regaining it as we move round it, is not what a naive-realist means by it. Of course, Ayer says that if a naive-realist is prepared to change his terminology, then these arguments cannot refute him. Surely they cannot, but in that case we can no longer call him a naive-realist in the strict sense. Either he sticks to

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his naive beliefs that physical objects are permanent unchanging entities, and exist independently of our perception, and cannot be perceived if they do not exist; or, if he gives up these beliefs, he is no longer a naive-realist. Thus Ayer's objections amount to a recommendation that naive-realist's language should be abandoned, but they do not minimize the force of the arguments against the naive-realistic beliefs regarding the physical objects.

As a result of rejecting the 'assumptions' that are basic to the common sense notion of a physical object, Ayer concludes that it does not matter whether we say that we directly perceive physical objects or our sense-data; it becomes merely a matter of the choice of language. If so, then it means that we can also describe all our experiences in terms of physical objects whether illusory or hallucinatory, dream or double vision, or mirror images. We can say that there are very short-lived physical objects, or distorted physical objects, or that there are physical objects called 'pink rats' visible to some people only under certain circumstances (God knows why!). Sometimes one physical object becomes two if we press one eye-ball. Further, as we have seen, by moving about we can change the shape, size and colour of the physical object, and then, by moving back to our original position, give them back their original shape, etc. Let alone the fact that it is strange for common sense to call all these immediately experienced appearances physical objects, it is inconsistent with Ayer's own assertion that the motive of sense-datum language is to make the distinction between physical objects and sense-data as clear as possible. He points out that the philosophers make sense-data as a kind of substance, with the result that this distinction get blurred. His recommendation could be interpreted as coming to the same thing in a reverse order.

Let us see, in a particular case, what this assertion — that it does not matter whether you say that you directly see physical objects or sense-data — comes to! Suppose you see

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an appearance, described as the bent stick in water. It can be described in either of the two following ways: (1) you have sensed a sense-datum with the quality of bentness which you mistook to be the real physical stick, which it was not; or (2) you have perceived a bent physical object, which existed only in water and only as long as you perceived it. Further, it can again come into existence and get annihilated if you put in and take out *another* physical object, namely, a straight stick in water. But these are exactly the properties we assign to sense-data and not what we mean by a physical object. It may be objected (and rightly too) that, if all the facts can be described in the latter way, without any logical contradiction, then are we not entitled to say that we perceive physical objects directly? But what is a physical object? Is it something more than these appearances? Is it some kin of entity over and above sense-data, or is it merely a group of sense-data, or both? We are not, at present, in a position to answer this question fully, until we have discussed other important allied topics. It might mean any of these things.

At present we are faced with two alternatives: (1) Either we give up the concept of a physical object as a spatial and temporal whole persisting independently of us, because there is no logical contradiction in doing so, and name the groups of our sense-data physical objects, in the phenomenalistic sense; or (2) we retain these generally accepted notions as criteria of what a physical object is (which, the arguments say that we do not 'perceive' directly) and say that our sense-data are entities distinct from, though related to, such physical objects. It is a difficult choice. We tentatively choose the second alternative for the following reasons:

(a) The first alternative, though it describes our experiences, does not *explain* them; whereas the second alternative serves the purpose of explaining the course of our sense-experience.

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(b) It is a universal belief, verifiable by our practical life (even though not by logic) and therefore it cannot be easily dismissed.

(c) This notion enables us to predict our sense-data with great accuracy.

(d) All those characteristics which our sense-data are said to have can be maintained if we regard them in some sense as the appearance of the physical objects, and we can retain this notion without in the least contradicting anything known in experience or in logic.

So, the arguments from the relativity of sense experience seem to establish that, in seeing these changing appearances, we do not see the unchanging physical object of common sense directly.

Granted this, it might be asked why can we not hold that all these appearances we see are physical in the sense that they exist as physical realities, whether we perceive them or not. This is a different view from the one we have discussed above. It does not deny the fact that we only perceive fragmentary appearances, but merely assert that all these may themselves be physical and exist unperceived, whereas common sense would not allow an unperceived existence to all the appearances, such as, the illusory or hallucinatory ones. If these appearances were physical and if we see them directly, it would follow that we see something of the physical world directly. But even this view cannot be maintained in the face of the causal arguments.

The Causal Argument — The causal argument explains the reason why it is that different people see different appearances at different times and under different conditions. The appearances of a thing do not depend on the physical object alone, but also on us, that is, our physiological and psychological mechanism, as well as on the media intervening between us and

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the physical object, such as light, distance, air, fog, curtain, glass, etc. Suppose that I am seeing a certain appearance which could be described as the appearance of a table. This appearance will change if there is a change in the table, or in me, or in the intervening medium. If the table is removed, all the appearances will disappear; if I go out of the room, they will cease to exist for me. Moreover, the changes in the intervening medium too, will affect them in other ways, as for example, if there is a drop of water trickling down my spectacles, all the appearances I see will become wavy and get distorted. Great distances will make everything blurred; short-sightedness, fatigue, cold in the nose, will all make a difference to the kind of appearance I perceive. This dependence of these appearances on us is interpreted as *causal* dependence in the sense that all these factors are supposed to be *constitutive conditions* of the occurrence and structure of the kind of appearance we see. It follows that if any of these factors were absent or different, the resulting appearance would either not exist at all, or would be different. Now, when so many factors enter to 'cook' a sense-datum, how can it exist in the absence of its constitutive conditions? The most important of these conditions is the presence of the percipient, that is, his physiological and psychological mechanism. The conclusion drawn, therefore, is that, since our perceptual world is causally dependent on the percipient, it cannot exist in the absence of the percipient. If so, it follows that this world cannot be identical with the independently existing physical world.

The main objection[6] to the causal argument is that it assumes the *knowledge* of the physical objects such as sense-organs, nervous system, brain, air, glasses, etc. This knowledge is not *a' priori*, but empirical. Now, if the argument holds that we do not know the physical object, it is wrong, since it rests on the very assumptions which it attempts to falsify. To answer this, we must point out that all that this argument

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needs say is that since what we immediately perceive comes to us filtered through our sensory and psychological mechanism, that is, the nature of this mechanism partly determines the existence and the kind of appearance we see, *this* appearance cannot be the physical object which is supposed to be unaffected by us. It need not deny the knowledge of the physical world gained in other ways.

This argument might be confused with another form of it which is irrelevant to the theory of sense-data. It is sometimes objected that the causal argument denies the independent *existence* of the physical objects, but since it assumes such physical objects as eyes, ears, brains, etc., it cannot throw doubt on their independent existence. It is true that our body, sense-organs, nerves and brains are themselves physical objects, and it would be absurd to say that they depend on themselves for their 'existence'. It is not for their existence, but like other physical objects, for their '*perception*' that they depend on us, that is, on the kind of sensory apparatus we have. Just as everything will appear blue, green or red if we have blue, green or red glasses on, similarly everything including our bodies, will appear as our peculiar individual sensory and psychological apparatus will have it appear. Since no two individuals are alike, presumably no two appearances will be alike. But, just as the objects do not depend on these glasses for their existence (only for their blueness), similarly physical objects do not depend on us for their existence, but only for their being perceived in a certain way. In fact, this argument need say nothing as to whether the physical world exists or not. It would simply say that if it existed and if it were independent of us, we cannot see it directly because whatever we do thus perceive depends on ourselves in the manner explained above.

The conclusion then is that these appearances, as dependent thus on the percipient, last only as long as their physiological

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and psychological conditions remain and disappear with the disappearance of these conditions. Thus they are to be regarded as short-lived, fragmentary and private to the percipient. Since the physical object is supposed to persist even when unperceived, it follows that these appearances are not the physical object.

It might still be asked, What reasons have we to conclude that, what persists unperceived is different from the appearances we perceive? Or, in other words, the physical world is different from the perceptual world? How do you know anything about what remains unperceived, and how do you know that it is not like our sense-data? It is true that there is no way of verifying it directly by sense-experience. But is it *reasonable* to conclude that when part conditions of a thing are removed, what is left is not the same thing. Even within our own direct experience we find that from different angles and under different physiological conditions we see different appearances. It means that changes in our physiological apparatus produce a difference in these appearances; so we conclude that the removal of that apparatus will entirely annihilate them. Thus, whatever remains can hardly be exactly the same appearance.

It may still be objected that this is only a *belief*, and that we do not *know* that things which exist independently of our perception are not numerically the same as our sense-data. This view is called instrumental or selective theory. The presupposition is that our sense-organs are only instruments to select some appearances, out of a vast collection, which exists all the time, and under all conditions. This secures direct perception of the physical world. But there are serious objections to the view, which will be discussed later. Here it is enough to indicate that it will mean that every single appearance that a human being, or an animal, sees, in all circumstances, that is, whether in waking life, dreams, delirium, mirrors, drunkenness or

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phobias, and illusions of all kinds, are all real and independent physical existents. They all exist all the time, we just happen to select sometimes one and sometimes another. This is a view which we cannot accept.

A further objection[7] to the causal argument is that, if a thing owes its properties to us, it does not follow that it does not really have them. If a carpet 'looks' blue to us, why can we not say that it is blue? It may be blue in itself. It merely owes the way it 'looks' to us. The answer is that, if by a carpet we mean a physical object (not the sense-datum, which *is* blue), then it is perfectly legitimate to say that this carpet 'looks' blue, or green, or grey, but it really is of x colour. It means that though we say that so-and-so looks such-and-such, we are not discarding the possibility that it may really have certain other, even inconsistent, shades of colour. But if we say, on the basis of its looking blue, that the carpet is really blue, we are *ipso facto* implying that it is not in itself grey or green. What then are we going to make of another appearance, say, grey, when we see the same carpet 'looking' grey? Are we to say that, because the carpet looks grey, it is really grey? Again, what about the previous assertion that the carpet is really blue? Since all we directly see are such different 'looks' of a thing, it follows again that we do not see the thing directly at all.

Illusions and Hallucinations — In spite of these arguments, our position is still open to question. It can be said that these arguments do not conclusively prove that we never perceive physical objects directly. The argument from perspectival illusion cannot deny that *one* of the innumerable appearances *may* be of the real physical object, whether we know it or not. The causal argument cannot rule out the possibility that the same appearance we see *may* be the independent physical object since we cannot, by sense-perception,

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verify what it is like in itself. So, to answer this, we come to those specific cases where what we perceive is admittedly not a physical object. It could be said that in the so-called cases of normal perception, that is, perception in perspective, we see the physical object. But in such illusions where at night we see a bear instead of a bush, mirror images, or dreams, or double vision, or hallucination, or phobias, or manias, or deliriums, whatever we see (though qualitatively similar to our so-called veridical perception), can by no standards be called a physical object. These experiences are more private and subjective, but empirically they are as real to us as the veridical experience.

Let us first see the difficulty in the case of mirror reflection. Here we have the example of a space, with objects very much like the ordinary objects, which is not the so-called physical space. It cannot be fitted in with the ordinary space. We try to move into it, we cannot. The space behind the mirror is not inhabited by the objects we see in it. Yet, visually this space is continuous with the space outside it. Usually the space in the mirror is illusory on the basis of touch. We get different tactile sensations if we try to touch the objects seen there from what we would expect to get. But if we touch those objects which are supposed to be outside the mirror, we also see ourselves (a body like ours) touching the objects in the mirror. How do we decide where we are and where the objects are which we are seeing or touching? If it is said that we take location from our bodies, the answer is that our bodies are also perceived objects like other objects, and no amount of somatic data by themselves would enable us to locate where our bodies are. It might be said that, if we touch mirror objects, we get different sense-data, or if we try to get into the mirror space, we bump into it; but it is possible, *as far as* only visual sense-data and the feeling of bump go, that we get the bump while trying to get out of the space of the mirror.

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It seems that all the objects we see, whether inside or outside the mirror, are equally real or unreal. What then are mirror reflections ? We shall say negatively that they are not physical objects,[8] nor are they clear illusions.

As far as illusions and hallucinations are concerned, it is often suggested that we do not really see an object, we only think that we see it, as for example, if I am walking in the dark and suddenly see an appearance, which would be called the appearance of a coat hung, I think I see a man, not that I really see one. Ayer[9] and Quinton[10] hold that, in hallucinations, we *think* we see an object (as for example, Macbeth thought that he saw a dagger). But this does not seem to be the case. We actually see an appearance characteristic of a man, or a dagger. It is not a case of wondering or thinking or suspending our judgement, but an actual experience as if there really was a man; otherwise we would not be frightened. Such emotional reactions do not accompany the state of mind described as thinking or suspension of judgement. We do later on realize that it was not a man, and may say that we only thought so; but what about the experience of the moment ? As far as the certainty of the moment goes, we cannot make out whether it is a so-called real object or an illusory object. Such illusory objects are not physical objects.

There have been attempts to explain some kinds of illusions and even mirror images[11] with reference to the physiological conditions, laws of perspectives, light, distances, laws of diffusion etc. Now, these explain only the physical conditions which bring about or cause such appearances. We learn all this as a result of studying geometrical optics, perspectives, sciences of human body, for instance. But the illusory experiences are primitive, and the subject under discussion is their momentary certainty and their epistemological status, not their causes. This explanation then does not justify the naive-realistic view of the direct perception either. If the illusory experiences are

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explained as a result of, as for example, light striking our eyes, one would argue that the light strikes our eyes in normal perception also. Since what we see in illusion is not a physical object, how can we accept a similar experience, caused in a similar way, as the direct perception of the physical object?

In the case of hallucinations it has been suggested that there is absolutely nothing which we see. It is not that we see pink rats, but we see 'pinkly'. The act-object analysis does *not* apply here. So the hallucinations should be described adverbially. This does not seem to be true. The experience of seeing pink rats is not on the same level as that of seeing 'clearly' or 'unwillingly'. In the one case we see 'something', in the other we see 'somehow'. Broad,[12] who analysed our different kinds of immediate experiences differently, admitting act-object analysis for our sight and touch experiences, but not for organic sensations, holds that the 'pink rat' experiences have an epistemological object.[13]

The question is that, if such an object is not a physical object, what is it that we see? The sense-datum philosophers again answer that they are our sense-data and hold that illusory sense-data are, epistemologically, on the same level as any other kind of sense-data sensed in immediate experience.

It is worth while to go a little more into the question of hallucinations as it is here that a conclusive evidence is found that what is seen is not a public physical object. Smythies gives[14] a long account of hallucinatory experiences, normal and complex, and those occurring under mental abnormalities.

He specially refers to the Mescaline phenomena, a drug which is found to work by affecting the action of the enzymes in the brain. When taken, it makes remarkable changes in persons, depending on their personality. Unexpected features of this drug are that the 'visions it produces are often of unsurpassing beauty and of utmost poetical integrity'. This goes on with the eyes closed as well as opened. The subject is not, as it is

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sometimes suggested, mentally deranged or drunk, because it does not interfere with powers of observation and objective reporting. Some research[15] has been done on this drug. He quotes[16] from those who have experimented with the drug. Experiences under this drug are described as the most beautiful, highly organized, real events and happenings which are not easily forgotten. They do not only see objects like mountains, lakes, forests of gold and silver and jewels of matchless brilliance, but entire scenes, such as a boat floating on the water, with beautiful princes and princesses singing in the moonlight, etc. They are conscious of themselves and of others, and of those scenes unrolling before them for hours on the walls or beds in the rooms. How can such highly organized spatial entitles be unreal ?

The question arises, What is the criterion of reality and unreality of experience ? Ayer[17] holds that the experiences which do not fit in a general order and are not substantiated by further experiences are not real. Accepting it as correct for practical purposes, Smythies points out that we could classify Mescal phenomena also in accordance with it. They have an order of their own, and prediction from hallucinatory experiences can also be confirmed by further hallucinatory experiences. These will not be biologically useful, but real does not mean biologically useful. The empirical facts enable us to say that sense experiences exhibit two orders; they can be classified either as representing physical objects or as patterns, designs and panoramic views. (Ayer[18] now seems to agree with Smythies on this point.)

If it is admitted that illusory or hallucinatory sense-data are epistemologically on the same level as veridical sense-data, it would follow that just as in hallucination sense-data are not parts of any physical objects (since there are none), the sense-data of the so-called veridical perceptions are not parts of the physical objects either. The so-called normal experiences and

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illusory experiences are after all qualitatively similar as far as our immediate certainty goes. The momentary man seen is just like a real man, the pink rats are equally like physical pink rats, if any. All the dream objects are not so different from those of waking life. The two chairs seen in double vision appear as if two real physical chairs existed. It follows that there is no hint in our immediate experience as to which is normal and which is illusory.

All these considerations, combined with the argument that whatever we perceive depends on our sensory and nervous structure, go to show that what we perceive cannot be the independently existing physical object. Thus naive-realism seems to finally break down.

ARGUMENTS FROM SCIENCE

This gets further support from what science tells us about the structure of our sensory and nervous apparatus, as well as the nature of the stimulus and the laws of light. Science asserts that the nature of the external stimulus is such that it cannot be discerned by the human eye. When certain electromagnetic waves travel towards us, and strike our eyes, their energy undergoes a transformation, and what we perceive as a result of this impact is not the electromagnetic wave but a patch of a certain colour, depending on the frequency of the light wave. Thus the very sensory and nervous mechanism of ours is responsible for this impossibility of perceiving directly that which exists independently of us. This, however, is a well-known commonplace which can be learnt from any elementary book on science, and it is not necessary to go into the details here. But there is stunning evidence as to the nature of our perception and the perceiving apparatus from the recent invention of the television.

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Some modern neurologists and some scientists believe that our nervous system creates a symbolic representation of the external world and that is private to us.[19] The representation is explained in terms of the television images.[20] How the representation takes place will be explained later. The evidence brought for the view — in terms of electronic stroboscope — is of the following kind.[21] This device is used in electroencephalography. It is a device in which a discharge from a condenser is passed at regular intervals through a gas-filled tube. This provides a flash of light of a very short duration. When the subject looks at it, certain complicated phenomena develop in his visual field, as for example, a large number of zigzag lines. The striking feature is the complexity of the pattern. This experimental observation is taken as evidence that the physiological mechanism mediating the visual perception of the external world functions like the television mechanism (or *vice versa*) on the following analogy. The television mechanism has three parts: the receptor, the conductor and the presentor. What generally happens is that the spatio-temporal pattern of light and dark shades is transformed by the receptor into the electrical pattern of excitation conducted by the wires of electromagnetic radiation. This pattern is transmitted to the set or presentor. Here the electrical pattern is transformed back into a copy of the original pattern. But, if the television studio is illuminated by flashing, instead of steady light, certain zigzag streaks and lines will appear on the screen, as described above. The conclusion drawn from this analogy is that the neuro-visual system behaves very much like the televisual system. Now, if physiological apparatus functions like a representative mechanism, it *cannot also* function as a simple optic device which it must if it is to give the direct perception of the object. It is logically and mathematically impossible for a television mechanism to give a direct view of the object televized.

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Another argument which supports this conclusion comes from the assertion of science that light travels with a finite velocity and takes time. The light of the sun, for example, takes approximately eight minutes to travel to the earth. It follows that events on the sun are not simultaneous with our sense-data which are later in time, and we are not, therefore, seeing the physical sun directly. This principle applies equally to all the objects, whether distant or near, though for practical purposes it makes no difference where near objects are concerned. But if we cannot see the physical object directly from a long distance, at what precise point do we begin to perceive it directly? This is a very fundamental change, but in the continuous series of appearances which we see as we approach an object, there is no hint at which precise point this important change occurs. The conclusion again is that we do not perceive any physical object directly at all.

Now, these are the kind of arguments which show that the naive-realistic belief in the direct perception of the physical world cannot be retained, and our conclusion is that what we directly perceive are short-lived, private, fragmentary particulars which depend partly on us for their existence.

Our next question then is, what do we mean by such terms as 'directly see', or 'indirectly perceive', which have been used in the course of the above discussion rather indifferently. So far we have established that the objects of our direct perception are not the physical objects of common sense, but the sense-data. What are these sense-data? What is their nature, their duration, their relation to the percipient and to the physical objects? These are the questions to which we shall turn in the following chapters.

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PART II

LOGICAL AND VERBAL QUESTIONS

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CHAPTER 4

THE MEANING OF THE TERM SENSE-DATA

The term 'sense-data' occurs, for the first time, in the history of modern philosophy in Bertrand Russell's *Problems of Philosophy* (1912) though the problem, as we saw, has been much older. What is the nature of that which we perceive directly ? Do we perceive the external physical reality directly ? Does that which we perceive directly and immediately also exist independently of our perception, or not ? This is the core of the problem, whatever term various theories may adopt, that is, whether they talk in terms of sense-data or impressions, or ideas, or sensibles, or sense-content, or phantasia.

Various arguments from illusions, from the dependence of perception on our nervous structure and the mind, and scientific considerations challenging our naive beliefs in the direct perception of the physical world (which have been examined in detail) force us to conclude that in spite of certain philosophical attempts at defending them, these beliefs completely break down. Accepting what common sense means by a physical object, we saw that our perceptual world is not identical with the physical world. For Locke and Berkeley it was the world of our ideas, for Hume, of our impressions. In contemporary terminology the objects of our direct experience are known as sense-data.[1]

What are these sense-data that we sense directly ? What sort of objects does the term apply to ? It is an important question because the nature of our perceptual world and its relation to the physical world have been conceived differently,

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and, accordingly, the term sense-data has been defined in different ways and given different meanings.

The most general notion of 'sense-data' found in the early formulation of the theory is that they are "objects of our direct and immediate experience", or objects we directly sense in the sensory experience. Now, ordinarily, the so-called physical objects, like tables, chairs, books, etc., are said to be the objects of our experience. But both these notions, namely, the 'physical objects' and the 'experience', are complex and analysable into simpler terms. Our total sense-experience consists of visual, tactual, auditory and alfactory experiences. Similarly, the physical object of common sense is supposed to comprise many qualities, for example, colour, shape and size, smoothness, hardness, sound, heat, cold, etc. Thus, if we analyse our complex awareness of the physical objects, then in the last analysis, it resolves itself into the acquaintance with such objects which would be called the appearances, or the sensible qualities, of the physical objects. By one sense we can experience only one quality, as for example, by sight we can only see its colour and shape, by touch we can only feel its hardness, by auditory sense we can only hear noises; and *vice versa*, that is, only by sight we can see its colour, only by auditory sense we can hear noises, etc. To such sensible qualities as colours, shapes, hardness, temperature, etc., Russell decides to give the name 'sense-data', and the application of this term is generally in sharp contrast with the application of the term physical object. Thus, 'sense-data' is the general term applied to such objects known in direct and immediate experience.

If sense-data are simply objects known in direct and immediate experience, it follows that objects known in all forms of direct and immediate experiences, whether veridical, illusory, hallucinatory, dream, etc., can be called sense-data. Moore[2] gives a broad class of the sense-experiences in which

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an entity of some kind is experienced. This entity, according to him, we could call our sense-datum.

The following is a summarized account of it:

(1) Images (in the narrowest sense of the word) of waking life
(2) Dream images
(3) Hallucination and illusory experiences
(4) After-images
(5) Objects known in sensation proper.

He holds that we have various kinds of direct sensory experiences, and an entity of any one of the kinds mentioned above experienced in them is a sense-datum.

Now we may ask, (a) What makes entities of so many different kinds data of our senses? (b) What does 'direct and immediate experience' mean?

(a) Moore answers the first question by saying that apart from the fact that they are all objects of our sensory experience, they have "some common intrinsic property, which we recognize, but which is unanalysable".

What is that unanalysable property? Let us broadly classify Moore's five kinds of entities into two classes — namely, (1) the class of objects known in sensation proper, and (2) the class of images of all sorts, whether of waking life or dreams, or illusion, or hallucination — and ask, in relation to both, our original question, What makes them all data of our sense?

Here are some suggestions: The first class of objects known in sensation proper (such as coloured patches, hardness, smell, etc.), is called data of sense for the following reasons:

(i) They are known to us through our senses, that is, if I had no senses I could not possibly know that the grass is green, oranges are round, stones are hard, flowers have smell, etc. (ii) They are our data of sense, as our sensory mechanism plays a very important part in determining them. Even in sensation proper, when I say that I see a table, which particular

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kind of appearance I see, partly depends on my point of view and my present sensory and mental state and partly on other factors. (iii) They are apprehended directly by our sense-organs without any intermediary.

The other class of 'images' is certainly not sense-dependent in the way in which sense-data of sensation proper are. We can call up an image of a person with our eyes closed or recall a tune with our ears stuffed. Still, they can be classed as sense-data because:

(a) There is no qualitative distinction between them and the objects of our sensation proper. A patch of red colour, seen in a dream or in illusion, or in a mirror, or in imagination, is qualitatively perhaps just the same as the one seen in sensation proper.

(b) Images are very closely related to our sense-data of sensation proper in the sense that, if we have never seen an object, we can never have an image of it. This does not exclude the possibility of imaging 'fantastic' things as compared with the so-called veridical normal objects. But the object of normal experience is in a special sense a particular kind of complex constructed out of sense-data, grouped together and related in a certain way. The only difference between the two kinds of object is that the imaged or dreamt objects are different kinds of complexes constructed out of sense-data. Since they fail to conform to the order and manner in which sense-data are grouped, in normal life, they are pronounced as fantastic. But the basic data in all sorts of experiences are the same.

(c) All these images are also as much directly and immediately apprehended as the objects of sensation proper. So all these different kinds of objects can be called our sense-data.

This brings us to our second question: What does the term 'direct' and 'immediate experience' mean? This mode of experience is what Russell calls 'direct acquaintance'[4] or

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'direct awareness', and Moore calls it 'direct apprehension'.[5] Both are introduced as technical terms, mainly to mark the way in which we become aware of sense-data from the way in which we know physical objects, and they need explanation. When I am said to be directly acquainted with anything, as for example, a red patch, or a sound, I see it or hear it immediately, without any process or anything intervening between me and the patch, or the sound. Here no inference, no reasoning, is needed to apprehend them. If, for example, I see an appearance in my visual field which could be described as the appearance of a cup of tea, I am directly acquainted with this appearance. But suppose I pick up a newspaper and am no longer actually seeing that appearance, but a different one (besides that of the newspaper) which would be described as a winding line of the steam. Now, I know (or, correctly speaking, believe) that there is a cup of tea there, and I know that this steam is rising out of that cup (in fact, that is how I know of the cup), but I am no longer 'directly acquainted' with the appearance of the tea-cup. Such experiences would be described as cases of direct and immediate acquaintance. The essential condition is that a particular should be present in my sense-field and apprehended without any inference. (In this sense I am not directly acquainted with the other side of the tea-cup.) We are also directly acquainted with an image of, for example, a red patch, if we have it before us in our sense-field, but not with the patch itself of which it is an image, since the patch may not be present in our visual field.

It follows that we are only directly acquainted with just one aspect or one quality of the object, and not the whole object since it cannot be present in our direct sense-field.

Since sense-data have been described as the objects of direct and immediate apprehension or awareness, it is very often argued that there is a distinction[6] between the 'act of

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apprehension' or the consciousness and the 'object of apprehension'. In an experience, — 'seeing a blue colour' — the object of experience, that is, the blue colour, exists as distinct from the act of experience. The act of apprehension is mental, whereas the object is not. Russell calls the whole experience the 'sensation of blue', in which we could distinguish the mental 'act of sensing' from the sense-datum.

This definition of sense-data as the 'objects of direct and immediate acquaintance' has been criticised as 'circular'. If we ask what are sense-data, the answer given is — objects of direct and immediate experience. Then the direct and immediate experience is defined in terms of sense-data. But in answer to this it should be noted that the term 'immediate experience' or 'immediate apprehension' is wider than 'sense-data'. We may also directly apprehend certain mental facts, certain truths, certain universals, logical and mathematical connections, but all of them are not our sense-data. On the other hand, some philosophers also hold that it is possible that sense-data may exist without being directly apprehended (but this, of course, is questionable).

Sense-data are also defined as the 'given' in our experience. What does the concept of the 'given' mean ? Price[7] says that when we have an experience described as 'seeing a tomato', we can doubt many things about it. Whether it is a real tomato or only a picture of one; whether I am dreaming or not; but what cannot be doubted is that there is a red, round patch in my visual field, or that I have experienced a particular red something as present in my visual field (which is not an attribute or a universal). This peculiar and ultimate manner of being 'present to consciousness' is called 'given' and that which is thus present is called a 'datum'. Data of this special sort are called 'sense-data'. The corresponding attitude is called 'acquaintance', 'intuitive apprehension,' or 'having.'

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This peculiar 'given' of sense, according to Price, has a 'presentative function' to perform. They present to us, and make us believe, whether rightly or wrongly, in the existence of an external world.[8] It means that sense-data carry with them the impressions that they belong to a certain physical object, whether in fact they so belong or not. Data of sensation proper always so belong, while others do not, although at the moment of sensing the claim is the same.

Sense-data, defined as the objects of direct and immediate experiences, or as the indubitable given in sense, are also regarded as the basic and primitive elements in perception, epistemologically prior to the experience of the physical object.

Various objections have been brought against both these definitions of sense-data, namely (a) the objects of direct acquaintance, and (b) as the indubitable given in our experience which amount to one general criticism.

Ayer says that the definition of sense-data as the 'objects of direct acquaintance' is not 'illuminating'.[9] By direct acquaintance, Russell means awareness without any process of inference or reasoning. The objection is that physical objects are also known directly, in the sense that we do not consciously infer them but just perceive them as present before us. So the definition does not necessarily imply that physical objects are not objects of direct acquaintance, that is, it does not clearly distinguish the sense-data from the physical objects. If asked what are the objects of direct acquaintance, we shall say coloured patches, noises, organic sensations, and so on, and may even point them out around us and say — these are the objects of our direct and immediate experience. Not only does this not show that these are not physical objects, but we can refer to a physical object in the same manner with no inferences involved.

To meet this objection, we should realize that the term sense-data is a technical philosophical term and we cannot

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expect to understand it fully, unless we first understand the meaning of direct awareness or immediate sense-experience. Once the meaning of direct and immediate awareness is understood, it becomes clear, as we have seen, that sense-data are objects of direct awareness in a sense in which physical objects cannot be; that is, in a single momentary experience we are directly aware of just one aspect or appearance, the rest of our awareness of physical objects is interpretation or association. Still, a further clause needs to be added to this definition to make it clear that these sense-data are dependent on the percipient (in some sense, to be explained later), whereas the physical objects are supposed to be independent of him. This is what Russell means by sense-data as the objects of direct and immediate awareness.

This was, however, made as a verbal point though not wholly, since Ayer's further criticism is that behind this definition lurks the suggestion that sense-data are real entities and not just a different way of speaking about our experience. We shall discuss it later. But other philosophers[10] have criticized this definition by denying that there are, or can be, any object of direct awareness, or there is any direct awareness as such. The criticism is similar to the criticism against Price's definition of sense-data as the indubitable given in our sense-experience. It is pointed out that what we actually consciously experience as the 'given' to us is not a sense-datum, but a physical object in its fulness. When we open our eyes, we see a table, or we are directly aware of a table, and not just a brown, rectangular, hard patch.

This particular criticism of the definition of sense-data as 'the given in sense', can assume one of the two forms.

It might be said (a) that it is impossible that anything given as such, apart from all its relations and qualities, can exist, or (b) there may be something given, but we can never know it, because we can never consciously experience it.

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Now as to (a), it may be true that whatever exists is also related and always qualified, but there must be something 'given' which *is* thus related and qualified. Unless there are certain terms to be so related and qualified, there can be no relations as such. So we cannot deny the existence of the 'given'. Price[11] admits that when we talk of the given, or attend to it, we may change its 'givenness', that is, its relation to the mind, but from this we cannot conclude that there is nothing given. There must be something which is to be described, to be attended to, to be reflected upon, otherwise it would involve an endless regress.

(b) The second objection means that whatever is given in sensation, gets so much associated with other things due to our previous experience, and so much of expectations and interpretations get involved in it, that we can never discover it, never separate it from the rest, and 'really' experience it in isolation.

So, how do we discover this given datum or the object of direct awareness? It is true that at common sense level we are not conscious of sense-data; we do seem to perceive what we call physical objects. But we must distinguish between the two senses of the given. At common sense level, as a psychological fact it is the physical object which is given and which we consciously experience. Sense-data as 'given' are not objects of conscious experience. But the question is not one of psychology; that is, the point is really not whether we can consciously experience a sense-datum, but whether we can logically and theoretically discover it. Russell[12] holds that we reach a given datum by eliminating all that is due to habit, association, expectation, etc., so that which remains after the analysis is the given datum. Hence we need 'hard labour of analysis and inference' to extract the notion of sense-data from the total conscious experience of the physical object. If we do not analyse the notion of physical objects, it will put an end to all worthwhile

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philosophical and scientific inquiry. Since, logically, and by arguments, we can arrive at the notion of sense-data, the fact that we do not consciously experience them cannot be a fatal objection.

A few words as to what does inferring our sense-data or discovering sense-data mean. The term inference here is used in a very loose sense. We do not infer sense-data as, for example, we infer the unseen fire from seeing the smoke rising in the distance. Logically inferring sense-data means that we come to discover and understand, as a result of philosophical reflection and conceptual analysis, the nature of our sensory world as consisting of objects which are short-lived, fragmentary, private particulars, dependent on the percipient.

Granted that sense-data are discoverable, yet if they involve an element of inference or analysis, then the objection can be that, why should we accept them as primitive and basic or epistemologically prior to the experience of physical objects? How can we, in principle, exclude physical objects from being objects of direct awareness, and being epistemologically prior on the basis that they involve an element of inference?

Our answer is that we accept sense-data as basic and epistemologically prior objects of direct acquaintance in a sense in which physical objects can neither be basic nor objects of direct acquaintance for the following reasons:

(1) Inference from physical object to sense-data is a legitimate inference, whereas inference from sense-data to physical objects is not always legitimate. It means that the existence of a physical object, in so far as it is known, is known only through sense-data. Thus, in so far as it is known, it logically and empirically entails the existence of sense-data. But mere existence of a sense-datum does not logically guarantee the existence of a physical object.

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(2) Sense-data are the most indubitable parts of our total experience, in the sense that we cannot doubt the fact that we have experienced something.

(3) The occurrence of a sense-datum is evidence in itself. Their existence can neither be proved nor contradicted by any argument or any act on our part.

(4) In the experiences of the infants, only sense-data exist. Later on they learn to correlate them into groups. In adult life too, when we are said to perceive common sense physical objects, we in fact always sense one or more sense-data and unconsciously take it to belong to what common sense calls a physical object.

(5) We are always constantly sensing sense-data, except in dreamless sleep, or when we are unconscious. But the experience of the physical object is not so pervasive.

(6) If there arises any doubt as to the existence of a particular physical object, that is, whether a given sense-datum belongs to a particular object or not, it can only be resolved on sensing further sense-data. We can accept or justify or reject our beliefs in the existence of a particular physical object only on the evidence of sense-data.

(7) All the predictions of common sense and science, in so far as they are verifiable, are verified in terms of sense-data alone. In short, all that we know of the physical world, we know on the evidence of the sensible world.

This is the interpretation we would give to sense-data being described as 'given', or as 'objects of direct and immediate acquaintance', in the sense in which physical objects are neither 'given' nor are they 'objects of our direct acquaintance'.

There are, however, certain other definitions of sense-data which do not exclude the possibility of certain physical realities being our sense-data. Moore[13] says that he intends to so use the term 'sense-datum' that "*whatever is directly apprehended* must be a sense-datum", whether it be a sound, a smell,

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a colour, etc. Now, on this definition, *if certain physical realities can be directly apprehended*, they would be our sense-data, and Moore meant exactly what the definition implies. He is giving the term 'sense-datum' a wider range and is not excluding the possibility that certain physical realities, if directly apprehended, *may* be data of our sense. As to the question whether this *is* the case, he had been very doubtful for a long time. Though, in the beginning,[14] he introduced the term 'sense-data' to answer the problems arising out of the facts of illusions and relativity of sense-experience; later it was a slightly different problem that engaged his attention. As he became more convinced of the validity of common sense physical object propositions, and accepted them as fairly certain, the question of sense-data became the question of the analysis of such physical object propositions.[15] Now *the notion of sense-data as a mere analysis of physical object propositions acquired a different meaning from that of sense-data as contents or objects of our immediate experience, in part essentially dependent on us for their existence.* As dependent on us, they cannot be physical objects or parts of the physical object. But as analytic products of physical objects (known for certain to exist) they may possibly be physical.

Let us first examine two of Moore's definitions from which it follows that sense-data may be physical parts of the physical objects.

In *Some Judgements of Perception* (1918), Moore defines sense-data as the "ultimate subjects of perceptual judgements".[16] Taking for granted the existence and knowledge of physical world as certain, his problem was to ascertain the meaning of such physical object propositions (or perceptual judgements) as 'This is a door', 'This is a hand'. We know that it is so, but what do we judge, when we judge 'This' is a door ? What is 'this', that is, this 'presented object' ? It is obvious that 'this presented object', of which I judge, is not the whole door. But whether it is a part of the surface of the door is doubtful.

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In *Defence of Common Sense* (1925), he explains what he means by sense-data with reference to the human hand. He says that when I look at my right hand I can 'pick out'[17] something with regard to which it is first natural to think that it is a part of the surface of the hand, but later on, it is also possible to doubt whether it is really so. The judgement is about the hand, but also, in a more specific sense, it is about 'this presented object' or 'picked out object' which is our sense-datum. Again, sense-data are defined as "the ultimate subjects of our judgements". If the physical object is a subject of such judgement, sense-data may be the ultimate subjects, in the sense of being smaller spatial entities, smaller in extension and duration, but not necessarily different in kind from the physical object. In fact, in 1918,[18] Moore was 'inclined' to favour the view that they were a part of the surface of the physical object.

Now, Moore's notion of a sense-datum as the object that we can select, or pick out, from our visual field if we look at our hand, and which it is natural to take as part of the surface of the physical hand (yet it is possible to doubt it), has given rise to a very wide criticism. The criticism, in general, is that the instructions which Moore gives to select sense-data are not very clear. A person, hearing these instructions, would not know what sort of object is meant, or what to pick out from his visual field, which is not what he usually takes to be a physical object. Suppose we are asked to look for an unfamiliar peculiar physical object, as for example, a 'jerboa'[19] or a 'fovea',[20] under the instructions given to us by the persons who know about it, we can find them. But under Moore's instruction we cannot pick out a sense-datum. Moreover, this definition does not show what sense-data in general mean.

Now, when Moore said that sense-data are the sort of things which could be thus picked out what, I think, he was trying to show, even if his language failed to convey it, was as follows. By a human hand he meant what is generally meant by any physical

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object, namely, a spatial entity of the sort which would continue to exist even when it was not being perceived. When Moore wondered whether 'this presented object', that is, an appearance of the hand, was or was not a part of the surface of the human hand, the implied question in his mind was, whether this object that I directly apprehended could continue to exist unperceived exactly as I saw it or not, in a manner in which the human hand as a physical object could exist unperceived. Was this particular appearance I saw dependent for its existence on us or not ? In general, what he meant to find out was whether what we directly apprehend is the independently existing physical reality or not.

Moore believed for a long time that sense-data *may* be parts of the surfaces of physical objects (though this is not his final view) and there may be some philosophers who would agree with him, yet this is not the meaning that is generally assigned to the term 'sense-data'. This term usually stands for something which is dependent on the percipient (and which is not a part of an independent physical object). By dependent on the percipient we may mean dependent on his bodily position, sense-organs, nerves, brain and mind. It also depends on the medium, intervening between us and the physical object. This is a very important and essential part of the notion of sense-data, and this is what most of the sense-datum philosophers have meant by the term.

The meaning of sense-data as an analysis of physical object proposition, was further developed in terms of the translation of physical object language into sense-datum language. Thus 'sense-data' were stripped of their position as 'objects' of direct and immediate experience and became merely verbal conventions or linguistic conveniences. By the phrase 'existence of sense-data' Russell, Broad and Price had meant to show that they were actual entities dependent on us, constituting our perceptual world, and were distinct from the independently existing physical world. Ayer has, however, confined the question of sense-data to the various

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meanings and senses in which it is *correct* to use various words and expressions. Suppose, he says, I have an experience which would be described as 'I see a matchbox' or 'I touch a matchbox'.[21] This is quite a familiar and correct use of the words 'see' and 'touch' or any other words denoting certain modes of experience. The same words can also be used in another familiar correct sense, which shows that I am not seeing or touching the whole matchbox, but only a part of it. This is what Moore calls the "narrower and proper" use of the term. Further, in illusory experiences, I do not, in a sense, 'see' or 'touch' anything. Yet it is possible to use correctly the words 'see' and 'touch' in a way in which it can be said that I am really seeing something with certain properties, or we can say that 'it seems to me' that I am seeing an object, though there may not be *any* physical object. Now, this 'it seems to me' is not a very accurate description of what I actually experience; it may give the impression of being a probable opinion. So, in *Problems of knowledge*, Ayer prefers to express it thus — "I am now seeing a seeming object". Such 'seeming objects', according to him, are our sense-data.

As 'seeming objects', how are sense-data to be defined ? Ayer defines them as follows. The fact that A is perceiving a material object M, which appears to him to have a quality X, may be expressed in sense-datum terminology by saying that A is sensing a sense-datum S, which really has the quality X and which belongs (or A takes it to belong) to M. It means that if A perceive something, it does not follow that the thing necessarily exists.[22]

Now, *what is the difference between these various definitions ?* Do they refer to two types of facts or apply the term 'sense-data' to different kinds of object ? How do sense-data, defined as directly apprehended, sense-given, percipient-dependent objects, differ from sense-data defined in the above manner ?

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The phenomenal character of sense-data, according to both types of view, is not different. Ayer does mean by sense-data something directly apprehended. Thus the philosophers discussed earlier, and Ayer, apply the term to refer to such appearances or objects that are directly apprehended; they, in common (though in different ways), hold that the notion of sense-data is distinct from that of the physical objects; and that sense-data can exist whether there is any physical object or not. They believe that sense-data are dependent on our perception (with one or two exceptions). It is interesting to compare Ayer's definition of sense-data, just mentioned, with Dr. Broad's definition of sense-data in *Scientific Thought*, though their final theories are very different. "Whenever I truly judge, that 'x' appears to me to have a sensible quality 'q', what happens is that I am directly aware of a certain object 'y' which (a) really does have the quality 'q', and (b) stands in some peculiarly intimate relation yet to be determined to 'x'." Such objects as 'y' he calls sensa.[23]

So, if this is their starting-point, where lies the difference among different theories of sense-data? The main difference, I think, lies in the ontological status of sense-data and in their relations to the physical objects. The term 'physical object' has an entirely different connotation and reference in Ayer's theory from the rest of the philosophers. For Russell, Price and Broad, 'physical world' is something existing independently of our sense-experience. Moore remained puzzled for a long time. For Ayer there is no existence over and above what we perceive; so physical object has to mean for him some kind of relation among sense-data.

Another difference between Ayer which he shares in common with Moore, from the other philosophers, is that his definition of the term is far more extensive than those of the others. He says[24] that sense-data are constituents of a sense-field, which is directly experienced. If it can be empirically discoverable that physical

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objects are directly experienced and hence are constituents of sense-fields, then they are our sense-data. Moore also starts from the same assertion that if physical realities are directly apprehended, they could be our sense-data.[25] But further development of their theories is very different. Ayer, refusing to acknowledge any independently existing physical object, reduces the notion of physical object (or statements referring to physical object) to the percipient-dependent sense-data. He holds that there is no other supply of wealth over and above sense-data;[26] the world does not contain sense-data *and* material objects as there are tables *and* chairs.[27] Moore, on the other hand, cannot really give up his adherence to a realist analysis of physical object. So, in his philosophy it remains possible for a long time that sense-data may be physical. We shall examine these alternative views later.

What can we conclude, from the above discussion, as to the meaning of the term sense-data ? This term seems to refer to the kind of particulars, which we apprehend immediately and directly in the kind of experience known as direct apprehension; they are what is commonly called appearances of objects, whether seen in normal experiences or dreams or illusions of all types. Sometimes, they are called sensibles, sense-qualities, sense-contents, presented objects, etc., etc.

Now, there are two more points to be noted about them:

(1) They are unanimously held to be non-mental. Older British empirical philosophers regarded objects of immediate apprehension as mental. But it can be shown that there is not much in common with sense-data and whatever is meant by our mental states. They may be dependent on the mind to some extent, but they are not mental.

(2) Nor are these sense-data generally regarded as physical, with the exception of some of Moore's views. Though even he, in the beginning and the end of his reflections on the problem, seems quite positive that they cannot be physical.

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CHAPTER 5

THE NOTION OF UNSENSED SENSE-DATA

The question now is, Does our sensible world which we apprehend directly exist when not being apprehended, that is, Does the same sense-datum which I sense at one time exist when I cease to sense it?

First, we must distinguish between two different questions:

(1) As far as the *logical* question is concerned, it has to be admitted that there is no logical impossibility why they should not exist unsensed, that is, a sense-datum is the kind of entity which could be conceived to so exist without any logical contradiction, *unless* sense-data are so defined that, on the given definition, existence of unsensed sense-data becomes contradictory. A patch of colour or a noise, for example, is a sense-datum, and there is no logical contradiction in supposing that a patch of colour exists when it is not being sensed. Though it may be empirically false, it is not inconceivable like a square circle.

(2) Granting that it is not logically impossible to conceive of the existence of unsensed sense-data, we may ask — do they *in fact* exist? This question is answered differently by different philosophers. They define sense-data differently, and the answer to a large extent depends on what one means by sense-data. If sense-data are defined as dependent in some sense on the percipient for their existence, then the existence of unsensed sense-data becomes logically impossible. But if, on the other hand, they are defined merely as certain objects we are aware of in our immediate and direct experience, it is quite possible that they may exist unsensed also.

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Before we go further, let us clarify the meaning of the term 'unsensed'. Unsensed sense-data would mean those existing without the act of sensing, or in the absence of the percipient. So our question is, Can numerically the same datum which I directly sense continue to exist as it was sensed, when I no longer sense it ? or are the objects that exist unperceived, identical with our actual sense-data ? In Russell's terminology (*Mysticism and Logic*) are sense-data and sensibilia identical ?

I shall argue that though it is conceivable, yet certain empirical and scientific considerations make it practically impossible that, on the given nature of our perceptual world and physiological state, sense-data should remain unsensed. Moreover, it is not ultimately merely a matter of definition, but one concerning the total conceptual framework involved in our notion of the perceptual and the physical world, and the nature of our perceiving apparatus. Certain facts and arguments force us to the conviction that our perceptual world depends in part upon us for its existence and cannot transcend this dependence. Hence I shall conclude that sense-data cannot exist unsensed. But before I argue this position out I shall examine certain attempts at establishing the notion of unsensed sense-data.

Moore has, for a long time, held a partial belief in the existence of unsensed sense-data in various ways. In an article, "Status of Sense-Data",[1] (1914), Moore prefers to call sense-data, 'sensibles'. Moore's purpose is really better served by the term 'sensibles' because it means 'capable of being sensed', as well as 'actually sensed'. Now Moore described a sensible as an entity which is either known in direct apprehension or is of the '*same sort*' as some entities which are known in direct apprehension. For a patch of colour, even if not actually experienced, would be the *same sort* of entity which is actually experienced.

As to the question whether such unsensed sensibles exist, he points out that it is *not self-contradictory*[2] though it may be

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false to suppose that they do so exist. Moreover, it is 'conceivable'[3] that they exist unperceived.

Admitted that they can be conceived to exist unsensed, the question is — Do they in fact so exist, and what are the grounds for believing that they do? Moore allows unsensed existence to a 'limited class' that is, only, those sensibles which I sense in 'sensation proper' will continue to exist unchanged even when I am no longer sensing them, provided the physical conditions outside my body remain unchanged. The reason for holding this is a 'strong propensity to believe' that the objects I perceive do not cease to exist the moment I close my eyes. Now, in "Status of Sense-Data", Moore goes even to the extent of saying that the sensibles which I and you would see if, as for example, we looked under the table, exist at this moment though we are not perceiving them. But he also believes that our sense-data must be different 'owing to the different constitution of our bodies'; at the same time he holds that these 'different' sense-data exist when not being perceived. This, he asserts, implies that a vast number of sense-data exist even when not being perceived.

The question I want to raise here is — What does he mean when he says that our sense-data may be more or less different *"owing to the different constitution of our bodies"*?

(a) It may, on one interpretation, mean that sense-data *'depend upon' the constitution of our body* in the sense that our sensory and nervous system is a *partial condition or cause of the production of sense-data.* In that case, it leads to contradiction. If the nervous constitution of the percipient is a part cause of the existence of our sense-data, the question is:— How can the same sense-datum persist unchanged when this partial condition is removed? Moore is not unaware of this difficulty and tries to answer it by showing that there is a difference between the 'existence' of a sense-datum, as for example, a 'black mark', which we sense and the 'experience' of it. It is our 'experience'

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of the sensible that depends on our sensory and nervous system and not the 'existence' of the sensibles.[4]

But on his own admission, it is your and my *sensibles* that are different, and it is these different sensibles that exist unperceived and they owe this difference to our nervous constitution. It is *not our experience* that is different, and it is not our experience that exists unperceived, but these sensibles themselves which are different, owing to our bodily constitution and which may exist unperceived. So, if "owing to bodily constitution" means dependent on our physiological constitution for their occurrence, then the existence of unsensed sense-data becomes self-contradictory. They cannot exist unsensed, at least in the same form in which they are apprehended.

(b) But if we interpret "owing to bodily constitution" not as "causally dependent upon" but as *'selected by' our constitution*, then the situation changes. This implies that the sensibles of all sorts exist in the world; the sensible which you and I see are different because my sense-organs select certain sensibles which are different from those which your sense-organs select. But both types of sensible exist now, when neither of us is perceiving them. Let us see whether, on Moore's theory, we can hold this alternative. Moore's sense-data are entities we directly apprehend, having some kind of unanalysable property.[5] Now, sense-data can exist unsensed, if at all, either as phases of, or as parts of, some substances or on their own strength. For Moore, sense-data are not phases of the mind in the sense that they are not mental.[6] In "Status of Sense-Data", Moore holds that they are not physical either, that is, not parts of physical objects. Here physical objects are 'sources' of the sensibles. Now he says these *sensibles do not exist* in the same place *where their sources exist.* They do not exist in their own right in the physical space anywhere at all. They do not exist in the mind either. So the question is — In what sense do they exist ? If Moore means that they exist in the percipient's

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private space (sense-field), then they exist only as long as the sense-field lasts, not as unsensed. So in all the usual senses of "existence of unsensed sense-data" they do not exist, and one fails to understand in what sense can they exist unperceived.

Another alternative way of securing the existence of unsensed sense-data is to regard them as parts of the surfaces of physical objects. Moore has been greatly inclined to favour this view for a long time. It means that objects of our direct apprehension are parts of the surfaces of physical objects which can undoubtedly exist unsensed and, therefore, we can say that there are unsensed sense-data. In his later article, "Some Judgements of Perception" (1918), he feels 'inclined', in spite of the arguments to the contrary, to identify a collection of sensibles with the upper surface of the physical objects.[7] Even where Moore is so 'inclined' he is not very certain and there are some other difficulties (which shall be examined later in detail). Roughly speaking, the main objection is that how can so many different sense-data, sensed by X, Y, Z, be identical with the same part of the surface of the physical object ? Hence sense-data cannot be parts of the surfaces of physical objects. (In 1953, Moore himself gave up the possibility of sense-data being identical with the parts of the surfaces of physical objects as 'nonsense'.) If so, then the existence of the unsensed sense-data cannot be maintained in this sense either.

Moore's still later position (1942) is very uncertain; he leaves the question open.[8] He finds himself believing both of the two contradictory propositions, namely, that sense-data can and cannot exist unsensed; are and are not parts of the surfaces of physical objects. The weaker is the case therefore for their identification with the physical objects, the less are the chances, on this theory, of holding the existence of unsensed sense-data.

The defence of unsensed sense-data is also found in Ewing's *Idealism*; herein he bases his case on the ground that the physical

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objects are "groups of unsensed sensa".[9] Since a physical object exists independently of us, it follows that sense-data composing it can also exist unsensed. By unsensed sensa, Ewing means entities which are exactly the 'same in kind' as objects we immediately perceive. He also says that as far as we can tell, such sensa composing the physical objects are not themselves immediately experienced by the percipient.[10] So he avoids the contradiction by holding that sensa we immediately experience are 'numerically different' and 'grouped differently' from those sensa which compose the physical object. In veridical perception, they are qualitatively the same and can represent the physical objects in the sense that they have their counterparts in physical objects. But illusory and hallucinatory sensa have no such counterparts in physical objects.

The question is, on what grounds can we hold that the entities composing physical objects are like our sense-data? The main reason[11] for this view, according to Ewing, is that unless the physical object did consist of sensa, how could we establish their existence? We apprehend them through sensa; we take sensa *as if* they are parts of the physical object. Thus, though we cannot demonstratively know them, yet it seems a very plausible theory.

Though plausible, yet it is not the only argument which enables us to establish the existence of physical objects. There is the "argument from prediction", that is the argument which holds that on the hypothesis that physical objects exist, almost all our predictions regarding our sense-experience come true. This argument may be more significant in establishing the existence of the physical objects. If so, then the physical objects need not be like our sense-data, yet when our predictions about a physical object are verified, it will be a conclusive evidence for the existence of that physical object. Thus it is possible to establish the existence of physical objects without this assumption of similarity.

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We also find the possibility of the existence of unsensed sense-data discussed in Broad's theory of sensa. He holds that it is logically possible that sensa should exist unsensed in the following senses:

(a) It is logically possible that the same sensum may sometimes be intuitively apprehended and sometimes not.

(b) That sometimes it should be intuitively apprehended by A, sometimes by B, or some sensa should exist unapprehended for ever.[12]

He further holds that there may be unapprehended sense-fields; hence to belong to a sense-field is not the same thing as to be intuitively apprehended.[13]

Now, what does this imply? It seems that Broad is treating our sensa as if they were some kind of substances. All these characteristics which Broad attributes to them are characteristics attributed to substances, namely, that of capable of existing unsensed, capable of being perceived by more than one person. This impression is strengthened by the fact that he also holds that a sensum is capable of appearing differently from what it is, and capable of change and motion.[14] He further asserts that a sensum is not something existing in isolation; it is a differentiated part of a bigger and more enduring whole, namely, a sense-field which is a cross-section of sense-histories. A sense-history is a continuant, a kind of substance,[15] though not a physical substance. Now, if sensa were a kind of substance, they could be accepted as existing unsensed. But even in this sense they cannot be accepted as substances, because an important characteristic of a substance is that it does not come into existence as a result of certain perceptual conditions being fulfilled, but exists and persists prior to and after such conditions are fulfilled. But Broad believes that sensa are 'produced'[16] when certain conditions are fulfilled. So the sense-history as a continuant would only be a possibility, and not an actual existent continuant substance like a physical object. Later, he describes them as

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transitory, private, neutral particulars.[17] On his view, sensa are joint products of certain physical and physiological conditions, and the existence and presence of the nervous system is a very important condition, at the time when sensa are produced. If so, it is difficult to see how they can outlive their conditions, that is, the presence of the percipient.

(2) Broad, while talking of the conditions of sensa and sensing, asserts that, if the special occurrent conditions (as for example, striking of a bell in an auditory experience) are fulfilled without the general cerebral conditions (that is, the conditions of being awake, being conscious) being fulfilled, it is 'conceivable' that the sensum may be produced, but it is certain that it will not be sensed. Facts such as psychic blindness show that sometimes both these conditions are fulfilled, yet no sensa are consciously sensed by the observer. In such cases, it is likely that sensa may be produced without being sensed[18] (whether this is the case, we shall discuss later).

Broad here seems to be referring to certain physical processes which may go on in the world, but may fail to produce any sense-datum. He is not saying, here, that sense-data exist all the time and are not noticed, but that they may be *produced*, yet not noticed. Probably he is referring to the fact that sound waves may be set in motion as a result of the striking of the bell and may travel up to the brain, but we may not be aware of any auditory sensum. In that case, can we say that sense-data were produced but not sensed? In this case, only sound waves, as a physical process existed, but *sound waves* are not auditory sense-data.

Broad defines a sensum in *Scientific Thought* in the following manner—"Whenever I truly judge that X appears to me to have a sensible quality q, what happens is that I am 'directly aware' of a certain object Y, which (a) does have the quality q, and (b) stands in some peculiarly intimate relation, yet to be determined, to X." Such objects as Y he calls sensa.[19]

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Now, from this definition, it follows that sensa are objects we are directly aware of; we should also *judge* that X appears to have quality q, which Y really has. But in unnoticed sensa, both these conditions are not fulfilled. We, neither truly nor untruly, judge that X appears to have the quality q, nor are we directly aware of any object having a quality q. We do not know at all whether a bell is struck or not. Thus, on this definition of sensa, we are hardly entitled to grant an existence to sensa which are produced yet not noticed.

Another view which asserts the existence of unsensed sense-data is the selective or instrumental theory. In the form which is relevant to our present purpose, it believes in the existence of unsensed sense-data of all kinds, for all times and in all circumstances. It holds that each and every appearance, every sense-datum that anyone apprehends or will apprehend, exists in the universe. Our sense-organs act only as instruments to select certain appearances, which form our sense-data, and cut down the rest.

Now, this is very different from Moore's view which is that sense-data can exist unsensed as parts of physical objects, because Moore can allow unsensed existence only to few sense-data in sensation proper. But instrumental theory will have to accept all kinds of sense-data — normal and abnormal — existing unperceived. Moreover, this view upholds the direct perception of the independently existing reality, namely, that all these appearances we apprehend exist independently of us, and are perceived directly exactly as they exist. They are not perceived in any way different from what they are.

There are several objections which make it very difficult to hold this view:

(a) The adherents of this theory will have to admit that all kinds of sense-data, normal, abnormal, fantastic, dream data, exist in the universe. The pink rats that drunkards see, the two books seen in double vision, all exist. In fact, we shall

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have to say that all that what the insects and animals perceive is as much an external existence as those appearances which human beings perceive. It is so because the function of the sense-organs is only to select some from already existing mass of sense-data.

(b) Further, it must be noted that this theory denies causal connections in the world. All the alleged instances of causal connection are merely instances of selection. We believe, as for example, that when heat melts the wax, the presence of heat is an earlier condition for the melting of the wax. On this theory, we could hold that both the solid as well as the liquid states of heat coexist forever together. Normally we perceive its solid state. The presence of heat merely makes us select the perception of the liquid state of wax, not that it actually, at that moment, melts the wax.

(c) Lastly, it could be objected[20] that there is no 'temporal order' in the world. Events that are sensed in succession depend on our choice or selection of them to be perceived, and not on the order in which they actually occur, because they do not occur at all in any order but coexist. The succession of events is only the succession of the apprehension of them.

For these reasons, I conclude that the selective theory cannot be accepted and so we find no justification for maintaining the existence of unsensed sense-data in any form whatever.

Are there any arguments that positively show that there are no unsensed sense-data; or that our perceptual world exists only as long as it is perceived?

The most important argument seems to be the following — The 'sense-datum' is a term used for an object which we apprehend directly and immediately, and usually by means of our sense-organs. Now, the causal arguments, examined in the third chapter, show that whatever we perceive in part depends essentially on the percipient; we also saw that the

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attempts to defend direct perception of the physical objects breaks down. The exact nature of this dependence on the percipient forms the topic of a separate chapter. But this much is certain that the kind of appearance I apprehend — the noise I hear, the taste I taste, the smell I smell — is partly determined by my physiological and psychological state of the moment, for example, whether I am short-sighted or suffering from cold, or overtired, or mentally deranged. Another important determining factor is the media intervening between us and the object of which it is supposed to be an appearance. Now, this sense-datum can cease to exist if any of these three conditions are removed, that is, if either the thing is removed, or the light is removed, or I close my eyes.

This means that all these factors are important and sufficient; but are they all necessary for the occurrence of just this experience? If we begin to eliminate them one by one, what are we left with? It is admitted that sense-data can occur in the absence of the physical object, for example, Macbeth's perception of a dagger. So the physical object does not seem to be the necessary condition of each and every sense-datum. Then the intervening media, for example, light, air, glasses, etc., can also be dispensed with and we can still sense some sense-data as, for example, the dream objects or visual images. Hence by process of elimination, what remains is only our physiological and psychological apparatus, and this seems to be *the* necessary condition of all sense-data. If so, *how can anything continue to exist in the absence of this important and essential factor* on which it depends so fundamentally? Thus it is reasonable to conclude that sense-data do not exist after they cease to be sensed.

Russell and Price both would agree with such a view. Sense-data, for Russell, depend on the relation between us and physical objects, and will not exist outside this relation. Hence they are called momentary appearances.[21] In *Mysticism and*

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Logic,[22] he says that sense-data probably "never persist unchanged after ceasing to be data", though he allows the existence of sensibilia which are physically and metaphysically the same as sense-data, yet the above assertion implies that they are not exactly the same when they are not data to my mind. Similarly, in *Our Knowledge of the External World*,[23] he holds that we cannot say that just this private world which X perceives existed before he perceived it "because it is conditioned by the sense-organs, nerves and brain" of X. Since it is so conditioned, it follows that Russell would not hold that '*it*', that is, exactly the same world, can exist unsensed.

Price argues that sense-data are created *ex nihilo*[24] when suitable bodily and mental conditions are present, and when they cease, sense-data vanish again in *ex nihilim*. Moreover, it is not enough that there should be such conditions only in the beginning, because having started a sense-datum, or series of sense-data, they cannot leave it to itself; they must continue in that state if the sense-datum is to continue in existence.

So these sense-data are not momentary existents but short-lived particulars. A physical interruption does not, according to Price, annihilate a sense-datum. It is very interesting to note the contrast between Moore's and Price's views on this subject. Moore believed for a long time that if one closed one's eyes, then the sense-data of sensation proper would continue to exist 'if' physical conditions outside one's body remain unchanged.[25] Price, on the other hand, believed that the interruption of a physical stimulus was not by itself sufficient to annihilate the sense-datum, as for example, the passing of a cat in front of an object (momentarily) which we are said to be watching.[26] This contrast illustrates the contrast between their views on the relation between the sense-data and the physical object.

If one still insists that it is 'logically' possible for sense-data to exist unsensed, the question is — What is the point in holding

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what they do ? Some of the modern philosophers hold that the arguments from illusion do not prove that we never perceive physical objects; they only motivate us to change our terminology. Thus, even if we consider sense-data as linguistic conveniences, is it in any way advantageous to talk of the existence of unsensed sense-data ?

According to Ayer the introduction of sense-data terminology enables us to deal with the problems arising out of the perception of the physical world, by clarifying the meaning of the physical object statements in terms of the sense-data statements. Now, the problem of the perception of the physical objects is that sometimes they can appear to exist when they do not in fact exist.[27] The introduction of the sense-data enables us to say that, even in such cases, we experience something real, namely, our sense-data.[28]

What then do we achieve by assigning existence to unsensed (or possible, or obtainable) sense-data ? We assign the existence to unperceived physical objects, because, according to Ayer, it enables us to assert a number of hypothetical propositions about the contents of our sense-experience without specifying them individually. In assigning any existence to obtainable sense-data, there is the danger of confusing them with the physical objects. The usage of sense-datum language should be kept distinct from the physical object language, and should be determined according to such conventions which afford greatest advantages for it. So Ayer chooses to define a sense-datum in such a way as to make its existence logically dependent on its being directly apprehended at a particular occasion, and makes their *esse percipi*.[29] Only sense-data which are actually experienced are said to exist, though Ayer grants that one is free to choose another terminology. Yet, there is no point in doing so if the same problems of existence and non-existence, appearance and reality, break out in sense-datum language too, as they exist for the physical object language.

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'Sense-Datum' is a term applied not only to the objects apprehended immediately in sensation proper, but also to the objects of all kinds of immediate apprehension, whether they be illusions or dreams or double vision or any other kind of normal or abnormal experience. It is obvious that sense-data of so-called abnormal experience cannot exist unperceived. Images of all sorts can have no existence independent of the actual apprehension of them. Now from this two points follow:

(a) All our sense-data, whatever form of experience they may be apprehended in, are qualitatively indistinguishable from each other. That this is the case is shown by the fact that we are taken in, or deceived by, our illusory experience at that moment. In view of this similarity between the veridical and the illusory experience, *have we have any right to assume such basic and fundamental difference*, namely, that the sense-data of sensation proper exist unperceived and images of all sorts do not ?

(b) Those who hold that there are unsensed sense-data do so because it is not logically impossible, or it is conceivable, that sense-data can so exist. Well, it is equally not logically impossible, and conceivable, that images of all sorts do so exist. Why cannot I hold that my image of a chair is somewhere existing, or the horse I dreamt of is still grazing somewhere: there is no logical impossibility. Moore's position is very interesting. Though he is inclined to hold that no after-images, especially his own, exist, except while he is apprehending them, yet he cannot see 'why' there should be a contradiction, or 'where' does the contradiction lie, in supposing that images do exist unimaged.[30] But no one actually holds that images exist unimagined.

If we are to take note of the qualitative likeness between sense-data in sensation proper and images of all sorts, we must maintain either that (a) no sense-data exist unsensed, or (b) all sense-data exist unsensed, or (c) some exist unsensed while others

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do not. We have seen that we cannot hold (b), and the distinction that (c) asserts cannot be validly accepted. So I conclude that the only plausible alternative seems to be (a).

In *conclusion* it follows that we cannot maintain the notion of 'unsensed sense-data' if the term 'sense-data' is to mean what it is ordinarily understood to mean, that is, the object of immediate experience, dependent on the percipient. But this assertion does not exclude the possibility of holding that whatever exists over and above sense-data, *may* be something like our sense-data, may be sensibilia. But it is highly probable that sensibilia are different, however slightly, from sense-data, since removal of the part conditions, that is, the presence of the percipient, makes a difference to that which exists.

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Chapter 6

THE APPEARANCE AND REALITY OF SENSE-DATA

THE CLAIM OF CERTAINTY

It is clear by now that the term sense-datum denotes a short-lived appearance that a physical object is supposed to present to an observer, such as a patch of colour of a certain size and shape, or a feeling of pressure and hardness, etc., and it is supposed to be in some sense dependent on the percipient. Now, defined in this way, that is, appearances of objects to a percipient, the question is raised — Can sense-data be different from what they appear to us, or, in other words, can an appearance be different from itself, that is, what it appears to be?

Some philosophers hold that sense-data can be different from what they appear to be. The question here is — Is it as a matter of empirical fact that sense-data can be different from what they appear to us to be, or is it simply a verbal question, that is, sense-data can be and have been defined in a way that it is only logically possible that sense-data can have different characteristics from what they appear to have? We shall see that there are difficulties in holding this view both as an empirical fact and as a logical possibility.

The presupposition that such a view would have to make is (a) that sense-data have an existence of their own, different from what they appear to be; (b) that they are some kind of substances or things which are capable of existing unsensed, hence can appear different from what they are; and (c) as substances

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they can exist either in their own right, or as parts of other substances, such as mind or the physical objects (if these are to be regarded as substances). Let us see now which of these alternatives is adopted by the philosophers who believe that sense-data can have characteristics different from what they appear to have.

Moore[1] distinguishes between a sense-datum which is 'perceived to be' different and a sense-datum which is 'perceived to seem' different. His purpose in holding this distinction is to be able to allow the possibility of sense-data being identical with parts of the surfaces of physical objects. His main difficulty with such an identification was that in some cases we are not prepared to *judge* that a physical surface is different when seen on two different occasions, but we cannot deny that the two corresponding sense-data of the same surface, seen at different times, are perceptibly different from each other. But Moore says that the assumption of the view — that sense-data seen at different times are different — is that the latter presented object (i.e. the second sense-datum) really is perceptibly different from the earlier one. But it is possible that the sense-datum corresponding, as for example, to the tree, when the tree is seen from one mile's distance, may not really be "perceived to *be* smaller" than the one which corresponds to it when it is seen from one hundred yards, but that it is only 'perceived to *seem* smaller'. The same is evidently true of shapes, colours and sense-data of other sense.

This distinction which Moore draws is between 'being' and 'seeming' or 'reality' and 'appearance' of a sense-datum. If sense-data themselves are seeming or appearing physical objects, then what are seeming sense-data? As a matter of experience, we do not just seem to perceive a smaller appearance of the sense-datum of a tree from the distance of one mile; we actually sense the sense-datum as small. We *know* or *believe*, or *remember*, in some sense, that the original size of the tree was larger

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than the present appearance, but the present appearance is small and perceived to *be* small. This is evident from the photographs taken from various distances. Now, Moore's view implies that sense-data are not what they are actually perceived to be. If so, then can they have an unsensed existence (and in which of the various senses noted above ?) which is different from their sensed existence ?

Moore thought that he could hold the unsensed existence of sense-data at this stage, because he was inclined to favour the view that sense-data might be identical with parts of the surface of the physical objects. As such parts, sense-data could have all those characteristics which a physical object is supposed to possess, and one of them is that it can appear to be different from what it actually is. Thus as parts of the surfaces of physical objects, they could be smaller or larger or of a different colour from what they appeared to be. But (a) it is far from established that sense-data can be parts of the surfaces of physical objects, as there are innumerable difficulties in this view (which we shall discuss later); (b) Moore himself, having entertained this idea as a possible view since 1918 to 1953, gave it up in favour of the view that sense-data could not be identical with parts of the surfaces of physical objects; and (c) there are many other objections to holding sense-data as different from what they appear to be, which we shall examine presently and which apply to Moore's position also.

Broad also believes that sense-data can have different characteristics from those which they appear to us to have, and also that they can exist unsensed. He does not regard them as parts of the surfaces of physical objects. Nor are they mental; they are neutral particulars.[2] So, if they exist unsensed; they do so on their own strength. In fact, they are said to be parts of a sense-field, and the series of sense-fields constitute the percipient's sense-history,[3] which Broad regards

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as a kind of substance though not a physical substance. If sense-data were a kind of substance, then they could exist unsensed and could have characteristics different from what they appear to us to have. But this alternative cannot be accepted since an important characteristic of any substance is that it does not come into being as a result of certain conditions being fulfilled, but exists and persists independently of all conditions. Broad's sense-data are 'produced' when certain conditions are fulfilled. This sense-history is not an actual existent substance as a physical object would be. It is merely a hypothetical notion. Thus, if sense-data do not categorically exist unsensed as a substance does, in what sense can they be possibly different from those which are sensed?

Broad's definition[4] of a sense-datum, as we saw earlier, is: "Whenever I truly judge that X appears to me to have the sensible quality q, what happens is that I am directly aware of a certain object Y which (a) really does have the quality q, and (b) stands in some peculiarly intimate relation, yet to be determined, to X"; such objects as Y he calls sensa.

What does this imply? Y, which is a sense-datum, really has the quality q, which X only appears to have. We are directly aware of this appearance, since appearance means something as it appears to me; that is, whatever particular shape, size, colour, I am directly aware of, constitute that appearance. Thus the quality q, which X 'appears' to have, is the reality of the sense-datum. A physical object can be different from its appearance, but how can its appearance to us be different from itself?

Broad points out that there may be objects which are too obscure, or too minute for us to perceive distinctly, or we may sense objects without being aware of all their relations. Thus sensa may be such more differentiated than we think them to be. Or they may differ in quality from each other, when we think they are exactly alike.

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The answer to the question — whether it is possible for us to fail to notice certain characteristics of a sense-datum — actually depends (once the notion of sense-data in general is discovered) on what we mean by the phrase 'one sense-datum'. What is to be counted as one sense-datum? Is my whole visual field to be regarded as one sense-datum, or one of its parts, one sense-datum? If I am looking at a big book-case, with three shelves, is the whole book-case one sense-datum, or one shelf, one sense-datum, or is just one book to be regarded as one sense-datum? The answer is that it is to a large extent a matter of choice. It depends partly on how one chooses to define one sense-datum and partly on our attention — whether we attend to one book, or to the whole case. That is why there is very little agreement among philosophers on this point, and it has resulted in persistent criticism of the sense-datum theory itself. But if one can define sense-data in a way that would be logically acceptable to them one can then argue that it is possible that a sense-datum has characteristics which we fail to notice. Broad 'prefers' to so define his notion of a sensum that it is capable of change and modification. He himself says that this is a 'matter of definition'[1] and if anyone does not agree with him, he can make appropriate changes in his definition.

Even if we grant that sense-data can be so defined as to allow the logical possibility of our failing to notice certain characteristics that a sense-datum possesses, there are other difficulties which have to be solved.

Suppose a sense-datum was really different from what it appears to be; the question is, How do we know? A sense-datum is a short-lived, transient particular; and, as far as our actual apprehension of a sense-datum X is concerned, it is all we have. So long as we confine ourselves to just this exeprience of X, there is no possibility of knowing that it is not just X, but X+A or X—A. There can be only two ways of knowing

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anything about the sense-datum X once it ceases to exist: (a) either it should be repeated so that we could inspect it again and find out that we were mistaken, or (b) from sensing another later sense-datum Y, which is different from X, we infer that we must be mistaken in X. No one holds the possibility (a), that is, that of the repetition of a sense-datum.

The only other way to hold unnoticed characteristics in a sense-datum is, because it is found to be different from a later sense-datum. Russell says that two sense-data may be, and must be, different, even when we cannot perceive any difference between them, as for example, of three shades of colour A, B, C, A may be sensibly indistingushable from B, and B from C, but A is sensibly distinguishable from C. Thus the second shade cannot be the same as the first, nor as the third. Therefore, it must really be intermediate between them.[6] Now, it means that we infer the differences of earlier shades from the later shades by comparison and conclude that our sense-data have these differences, which we do not notice. Ayer[7] answers this point by saying that the relation of exact resemblance in respect of any sensible property is not to be regarded as applying to sense-data in the same sense as it applies to material objects. As applied to material things, it is both symmetrical and transitive, but it may not hold good for sense-data. He rightly points out that the logical counterpart of a relation between sense-data is not the relation that actually characterizes material things, but only the one *appearing* to characterize them; since material objects can really 'appear' to resemble one another without actually so resembling. Thus, it does not follow that sense-data must differ in ways that are not apparent, even if the corresponding physical objects do.

The sense-data theory, in contemporary philosophical opinion, is not a theory but merely a language, that is, a matter of linguistic preference over physical object language (whether it is so or not will be discussed in the last chapter). Suppose it was merely

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a matter of verbal choice, even then we should remember that the notion of sense-data was introduced to answer the problems arising out of the perception of the physical world. The main problem relates to various kinds of illusions: what we call physical objects, sometimes appear to have characteristics which they are not expected to have, or appear even where they do not actually exist. The answer to this is that, in such cases, what we perceive is not the physical object but our sense-data, which are only appearances of physical objects. If we allow the same distinction of appearance and reality to break into the realm of sense-data, the advantage of the sense-datum language is lost. So it is better to keep the two notions clearly distinct and not to assimilate them; otherwise the problem of perception would remain unsolved.

Next, if we really allowed that a sense-datum is different from what it appears to be, then this appearance itself is only an appearance of the sense-datum. Now, a sense-datum is known by means of direct apprehension. Suppose we directly apprehend an appearance B, which is the appearance of a sense-datum A, also apprehended directly. Now, this sense-datum B can itself present an appearance C, also to be directly apprehended . . . and so on, *ad infinitum*. It follows that (a) this view involves infinite regress; we can go on apprehending appearances of appearances of. . . .; (b) there will be no possibility of attaining any certainty whatever even in our direct apprehension. If we cannot be certain of our sense-data, how can we gain certainty about the physical world, since each perception is liable to be different and mistaken from what it is apprehended to be? The fact is that, at the empirical level, all our sensory experiences as experiences are real to us and our notion of the physical world can be accounted for on the basis of our sensory experience. Only some of these experiences, as for example, brown colour of the table seen under sunlight, are taken as the '*standard*' colour of that physical object (with

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reasons for this preference). Yet, if we see the table as violet under the violet light, our belief that usually it appears brown does not affect the certainty of *this* momentary experience.

Lastly, there is a great difficulty if we consider images and data of dreams and hallucinations. They are, to us, as much like appearances of physical objects as data of sensation proper. Even if one grants a distinction between reality and appearance of a sense-datum of sensation proper, what is the sense in holding that data of dreams or images may be different from what they appeared to us to be? It is possible that I do not 'remember' whether I dreamt grey or green, but when I do remember, then my dream-data must be green if I dreamt of a green thing. There can be no mistaking them. Their reality is nothing apart from the dream; so they cannot be different from themselves as dreamt.

In view of these difficulties, it is advisable to define a sense-datum as follows: it is what it appears to us to be and does not have characteristics different from those that we sense it to have. This way of describing a sense-datum seems to avoid certain difficulties which the other way does not. Thus, whenever there are facts which show that something is different from what we took it to be, it is better to express it thus — one sense-datum is 'replaced' by another. It is true that a physical object does not change with changes in us. But if there is one appearance and then a different one, without a change in the physical object, it can be explained as replacement of one sense-field by another, due to changes either in us (as for example, we move nearer to or away from the object or attend to it more closely), or in the intervening medium (as for example, light conditions etc.). Thus, "in the domain of sense-data, whatever appears is real".[8]

So far our discussion has been confined to logical considerations, that is, what is the best way of describing one sense-datum to account for apparent changes in our perceptual experience.

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There is one more point, which concerns the causation of sense-data, and suggests that the reality of our sense-data is its appearance to us. Now a sense-datum is a momentary appearance which is a joint function of the physical objects, the intervening media, and the percipient (sometimes it occurs even without the physical object). The moment our sense-organs, nerves, brain and mind come in contact with a physical object, a chain of physical processes reaches the brain, resulting in our seeing, as for example, a patch of red colour. The appearance that comes into existence is exactly as all these factors constitute it to be, and part condition of this occurrence is the percipient himself. Suppose I am short-sighted; I shall see what would be described as blurred appearances. These appearances for me are exactly as I see them, no matter what the physical world is like in itself, or how other persons see it. Hence, as the function of so many factors, it is reasonable to conclude that a sense-datum in itself *is* exactly as we sense it (since we ourselves partly constitute it).

If sense-data are what they appear to us to be, it follows that we cannot be mistaken as far as our awareness of sense-data is concerned. They are absolutely certain to us; or, as this fact is expressed in modern terminology, sense-datum statements are incorrigible.

THE INCORRIGIBILITY OF SENSE-DATUM STATEMENTS

The claim of the incorrigibility for sense-datum statements is based upon the evidence which constitutes their verification, namely, our experience. When I say 'I have a pain', or 'I see something red here', it is the fact of my having these experiences which renders these statements incorrigible, because our immediate experiences are absolutely certain. These statements are not incorrigible in the sense that others cannot doubt them. It is that the fact of my having an experience, which

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these statements express, is self-evident. It can neither be proved nor contradicted by anything that may go on in the world or happen to other people. It is so because I am not making claims to anything not contained in my present experience, and my present experience, to me, is indubitable. So we accept sense-datum statements, describing 'my' present experience, as incorrigible, because the grounds for accepting them are perfect.

The only mistake possible, regarding our sense-data, are verbal mistakes. We might tell a lie, or mis-describe our experience, that is, use the wrong word for it; but there is no possibility of making any factual mistake about the experience itself, for there is no room for anything short of certain knowledge. Now there have been some recent objections to the notion of certainty of sense-data in this sense in the suggestion that we may be mistaken even about our sense-data.

Austin[9] gives two examples. I may see a colour and hesitate whether it is mauve or purple or red. I am not confident how it looks to me. If I say 'This looks red to me', it shows confidence that whatever it may be, to me it looks red. But in the first case we hesitate. Sometimes we taste something and are not at all sure what it is, either because we have never tasted it before or because we cannot say what exactly it is, that is, whether it is the taste of pineapple or not.

Now the question is: What is it that we are not certain of? From the above example it follows only that we are not sure where to place these experiences, what name to give them, that is, how to label them. Words like pineapple, mauve (and all names) are classificatory, and here we are not sure how to classify these experiences in the recognized categories of things. Now, naming of an experience involves both sensing and recognizing. It is true that I cannot name an experience or recognize something unless I have had a similar experience before,

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learnt its name and remembered the relation between that experience and the name. But what about the experience for the first time, before I learnt to call it X? Did I not have it for certain? Can I not distinguish between two different experiences, as for example, sweet and bitter tastes, without knowing these English words? A small child, before learning the language would spit out that which he later learns to call bitter and relishes what is sweet. In the two cases mentioned above we are certain (to put it in intellectual terms) that this is a taste or colour, and certain that we cannot, for certain, call it X or Y. Now, unless we were certain (though without knowing its name) what it was like, we could not wonder if it was the taste of pineapple or not. In this sense, we immediately know all our sensory experiences, irrespective of the fact whether we know their names or not.

If this is the kind of incorrigibility claimed for statements expressing our immediate experiences, it follows that only sense-datum statements are incorrigible; physical object statements are not certain in this sense. So an objection is brought against *this* notion of certainty that it renders all physical object statements uncertain. It is said that the certainty which so belongs to sense-data statements is logical and not empirical certainty. But the word 'certain' has an empirical use in ordinary language for empirical statements, differing from logical certainty, and in this sense, physical object statement can be called empirically certain.

Now, when sense-data statements (as opposed to physical object statements) are regarded as incorrigible, it does not amount to a denial that physical object statements are empirically certain for practical purposes; they are usually accepted as certain after a finite number of tests are carried out. But there is an important and genuine difference between the way we know sense-data and the way we come to know physical objects. Sense-data are known directly and immediately, so

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they are absolutely certain. Physical objects are known only through sense-data (in some sense, to be discussed later). So their knowledge cannot be on the same footing as the knowledge of sense-data.

Secondly, only sense-datum statements are directly and conclusively verifiable. Their verification consists in the occurrence of the experience which is indubitable. So these statements are *natural terminii* to any process of verification, and are called 'correctors' or 'verifiers'. All physical object statements are verified or falsified through sense-data statements, but this evidence for them is never logically conclusive. It is always logically possible that the perception of what I call a physical object may turn out to be a hallucination, that is, further experience may falsify my belief in the existence of a particular physical object. No one, for practical purposes, doubts the existence of a physical object. But the nature of the case being as it is, a certain amount of theoretical doubt, brought to notice by philosophical arguments, cannot be eliminated, whereas the fact of immediate experience is indubitable.

This is what is meant by saying that sense-datum statements, expressing our immediate experiences, are incorrigible in a sense in which physical object statements cannot be.

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Part III

THE FACTUAL QUESTION: RELATION TO PERCIPIENT

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INTRODUCTORY

It is by now established that our perceptual world consists of sense-data, that is, perceived entities which, there are reasons to believe, are short-lived, private, fragmentary existents. Now we turn to a different question, namely, what is the nature and status of these sense-data? This is an important question, because on sense-data theory so far developed, we cannot explain the existence and nature of sense-data themselves. How and under what conditions do these fragmentary, private particulars come into existence, what is their causal explanation (and the allied question, where do they stand in relation to the generally accepted categories of thought, namely, the mind and the physical objects)? In the next two chapters we shall try to understand certain important but partial conditions required for the existence and awareness of sense-data.

As appearances to the percipient they are supposed to be related to the percipient, that is, the percipient (which is a complex notion) is regarded as a necessary condition for the occurrence of sense-data and also as being aware of sense-data. In this part we shall see in what sense the percipient is said to be aware of, as well as a constitutive condition of, the sense-data.

The relation of sense-data to the physical objects is discussed in the next part.

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Chapter 7

SENSE-DATA AND THE MIND

The relation between sense-data and the percipient is sometimes ambiguously expressed as sense-data being in part dependent on the percipient. Now the question is — In what sense are they dependent on the percipient? In very general terms, we could say that the existence of the percipient is a necessary condition for the existence and awareness of sense-data in the sense that had he not existed, there would, strictly speaking, be no sense-data. (This remark should be taken in the light of our previous discussion in Chapter 5 of the notion of unsensed sense-data.) Now, what do we mean by the 'percipient' as related to sense-data? The concept of a person is that he is a complex of psycho-physical organism, and though all the aspects of his self are integrally related, they can be treated separately for our particular purpose of exploring the relation between him and the data which he is supposed to sense.

As data of sense, our sense-data are obviously dependent on the sensory mechanism of the percipient, and there is evidence from physiology that our nervous and cerebral system must be in a certain condition if a sense-datum is to be sensed. But this is not all; our sense-data are also supposed to be dependent on the mind of the percipient. So the percipient as a whole seems to be related to sense-data and our task is to inquire into the nature of this relationship, with a view to ascertain whether and to what extent this relationship constitutes the existence and the nature of sense-data. Are they

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mental or cerebral or sensory, or related to all these factors? Moreover, what do they depend on us for? Is this dependence existential or qualitative or causal? In this chapter, we shall examine their relation to the mind, and in the next chapter, to the physiological mechanism of the percipient.

Of the many theories of the nature of mind, it is not possible even to discuss some of them here, and decide between them. But whatever view of the mind one may accept, whether it is a substance or a complex of events, or certain dispositions, the mind should at least be regarded as essentially involving some form of consciousness which senses our sense-data and is capable of other mental activities. Unless we assume this, the concept of perception becomes meaningless.

On such a view of the mind, our question is, Are sense-data mental?

The early empiricists, namely, Locke, Berkeley and Hume, who were concerned with the same problem, that is, with the nature of the world of our perception as consisting of 'ideas' or 'impressions' (instead of 'sense-data'), regarded them as mental. Now the question is — In what sense can sense-data be mental? It might be taken to mean that they are 'in the mind', as 'constituents of the mind'.

What do we mean by saying that they are in the mind? It cannot, in any ordinary sense of the word, mean that they spatially inhere in the mind. It can only mean that they are themselves mental acts or mental states. But what we ordinarily call mental states or mental acts seem to be very different and having characteristics which are different from sense-data. A sense-datum is a coloured extended patch, or a distant or near sound, or a certain organic sensation. But mental processes, like thinking, willing, desiring, do not seem to have much in common with sense-data.

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Mental acts (even acts of perception) imply some kind of conscious voluntary activity or effort of will, but in receiving impressions the mind, as compared with the other mental processes, is passive. Even if the percipient has a causal part to play in the production of sense-data, it is a more or less mechanical process, where no conscious activity seems to be involved.

It is not only that our sense-data do not have mental characteristics, the mind as ordinarily understood, cannot be said to have the characteristics belonging to the sense-data. A sense-datum is a coloured extended particular. If it was a mental state, we could say that we have red or blue mental states, or round and extended mental states. These are not the qualities we attribute to the mind, but they are qualities of sense-data. Then, our visual and tactual sense-data are in a sense 'outside' us (at least outside our perceived bodies, sensed as constituents of our visual and tactual field), and independent of our will in a sense in which our mental processes are neither outside us nor independent of our will. So it follows that they are neither mental acts nor mental states.

So, if sense-data are not in the mind in any sense, and hence not mental, how are they related to the mind ?

At the turn of the century, when Russell and Moore were combating with idealism, viz., that the objects of sense are mental, they made an important distinction between the two elements involved in our sense experience. Moore, in his historic essay, "Refutation of Idealism"[1] (1903), pointed out that the objects of our sense were regarded as mental owing to a failure to distinguish between two different elements in sensation (sensation being an ambiguous term), which, according to him, were in fact distinct. One he called 'the consciousness', and the other 'the object of consciousness'. In respect of the first, all our sensations are alike; what differs in different sensations is the object; for example, in the

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sensation of blue or green, the consciousness is the same and is in the mind and cannot exist outside the sensation, whereas the object, namely, the blue or the green, can conceivably exist even if the sensation does not. Russell[2] also makes a similar distinction between the act of sensation, which is in the mind and the object of sensation, that is, the sense-datum, which is not. Russell, and later[3] Moore, both give technical names to this mental act of consciousness or sensing, namely, 'direct acquaintance' and 'direct apprehension' respectively. When we have a visual or auditory sense-datum, for example, a red colour or a loud noise, we are said to be directly aware of them, or they are directly apprehended by us; but they are distinct from and never identical with the experience or the apprehension of them. According to Moore, this is the only sense in which sense-data are related to the mind (that is, apprehended by the mind, except that the mind can use the past sense-data in remembering, judging, etc.).

Later, Broad, who analysed some of our sensations into the act and the object of sensation, made a distinction between different kinds of sensation in respect of this analysis. As far as visual and auditory sensations are concerned, their analysis into act of sensing and object of sensing, according to him, is obvious; we see a red patch of colour, we hear a loud sound. It is not that we see redly. There is a state of mind with a red object. This act of sensing (or visual sensing) is mental, but the object is not. But when we consider bodily sensations, such as aches and pains, they do not seem to involve an object and it is nearer the truth to describe them as states of mind. Price also argues that the act and object analysis does not fit organic sensations. These two kinds of sensation, according to Broad, melt insensibly at the middle of the series, that is, we may talk of a sweet sensum or sweet sensation. So it follows that we need not insist on a uniform treatment of all our sense-data. (If pressed to choose, Broad would hold

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act and object analysis for all kinds of sensation rather than the other alternative.)[4]

If the question — whether sense-data are mental or not — hinges on this distinction between the act of sensing and the object of sensing, we have to ask — is this distinction valid? Moreover, if we reject this distinction, what will be the consequences? Will we have to admit (a) either that sense-data are mental or (b) that, if there are no objects of sensing distinct from sensing, there are (as is sometimes suggested) no sense-data? The other question is, (c) what will be the nature of the process called 'sensing'?

The first important point to note is that Russell[5] and Moore themselves rejected the distinction between sense-data and sensing. Russell rejected this distinction under the influence of neo-realists and Einstein and this rejection led to his adopting the neutral monism. Mind and matter, on this view, are not two distinct substances, but two different complexes constructed out of basic neutral particulars (grouped together differently), some of which are our sensations or sense-data. Any basic difference of kind between them becomes meaningless.

Moore, on the other hand, came to believe, as a result of some criticisms, that the *esse* of certain class of cases, for example, toothache, is *percipi* (but not of others, for example, the perception of moon). He distinguishes between the sensible quality blue belonging to a visual sense-datum and a blue object, for example, a blue tie. He says that he found it impossible to believe that anything directly apprehended could exist unapprehended; hence no sensible quality such as blue (as against the blue as the property of a blue object) can exist without the consciousness or apprehension of it.[6]

Now Moore's position seems to imply that the actual distinction between the act and the object of sensation (or of consciousness) depends on the question whether the objects

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of sensation can exist unapprehended. If they can, then they are distinct from sensing. So we must inquire — Can sense-data exist unsensed? Also — Is there sensing without sense-data?

First we must find out what does the term 'sensing' mean? Now, mind, it seems, stands in two different relations to the sense-data: (1) It plays a partial causal role, which we may call sense-datum genesis, or production of sense-data, and (2) also it stands in cognitive relation to sense-data, that is, it is directly aware of sense-data. These two distinct relations have not been clearly understood or recognized as distinct. They are not identical, though probably they never exist separately. Since the term 'sensing' can be used indifferently for either of these two distinct processes, it can give rise to confusion. We shall see later what this distinction is. At present, let us inquire whether (a) sense-data are distinct from sensing or not? i.e. sensing understood as sense-datum genesis, and (b) is sense-datum genesis mental?

Let us take a particular case, for example, the taste. If I say that I tasted a bitter taste, what is the difference between my tasting and the taste? Tasting a bitter taste constitutes the taste. Generally, a bitter taste is associated with eating something, for example, the quinine, but I can have a bitter taste without eating anything, for example, in illness. Thus, having a bitter taste or tasting is not a distinct act of sensing from the taste itself. The two are not different; 'tasting a bitter taste' seems to be one indivisible experience. So, in this sense, a taste cannot exist unsensed. There is no tasting, without its being tasting of a taste, nor can there be an untasted taste. The same will hold in the case of smells, organic sensations and other somatic and tactual sense-data. 'Smelling a smell', 'feeling a pain'— each is one single experience. What then would an unfelt pain or untasted taste be?

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What about visual sensations? This does not seem to be a different case either. Can there be a red sense-datum (whether of sensation proper or image or in dreams) which is not visually sensed? We have argued this in Chapter 5 and, for reasons given in that chapter, have concluded that there are no unsensed sense-data. Now, can there be any visual sensing without its being sensing of this or that visual sense-datum? I would not know what the sensing is, unless it is sensing of some sense-datum. So visual sense-data do not seem to exist unsensed either. Now, visual sensing, as sense-datum genesis, is not a distinct mental act from visual sense-data, because 'sensing sense-data' in this sense would express the one indivisible process of occurrence of sense-data in our sense-fields, where the mind plays a partial causal role; and the occurrence of sense-data is not something distinct from the sense-data. So, to say "there occurs a sense-datum X in my visual field" is equivalent to saying "I sense a sense-datum X in my visual field". In this sense, "sensing a sense-datum" becomes tautologous. It just means occurrence of sense-data in our sense-field.

So we can conclude that as far as sensing — in the sense of coming into the existence of sense-data — is concerned, the distinction between act of sensing and sense-data is invalid; nor can sense-data exist unsensed, that is, in the absence of the percipient's mind, which is a partial condition for the occurrence of sense-data. It so happens that we get a bitter taste when we eat certain stuff, for example, quinine. Since the quinine *as* a physical object can exist without our experience of taste, it is mistakenly thought that the quality of the bitter taste, as a sense-datum, can also exist unsensed, and is distinct from the experience of it. But the quality of bitter taste cannot exist unexperienced.

What follows from this admission that sensing sense-data is one indivisible process? The main reason for asserting this distinction was to show that sense-data are not mental. It

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is only the act of sensing which is mental. But on identification of the two, why should we say that since 'sensing' was considered to be mental, sense-data became mental too? It does not necessarily follow. On the other hand, we seem to be coming to the conclusion (to argue from the other side) that if sense-data are not mental, sensing a sense-datum understood as sense-datum genesis itself, like sense-data, is not a wholly mental process, in the sense of being in the mind as a conscious intellectual activity, open to introspection. It is a *sensory* process, or, if mental at all, it is so only in the sense of being part of our total experience. Or, if 'sensing sense-data' is one indivisible experience, then sensing (like sense-data) is a 'unique' process, related to the mind, brain, sense-organs, and also to the physical object. It is related to the mind in the sense that the mind is a partial condition for the occurrence of our sense-data. So the rejection of this distinction between act of sensing and the sense-datum does not necessarily commit us to hold that sense-data are mental, because sensing in this sense itself is not mental either.

If sensing in this sense is not mental, it follows (a) that it is not a form of knowledge. If so, then (b) when does knowledge arise, and (c) what then is the relation of sense-data to the percipient's mind?

Russell and Moore have defined sense-data as the objects of direct acquaintance or direct apprehension. Russell regarded direct acquaintance as a form of knowledge. Moore does not explicitly say so, but his discussion implies that direct apprehension is a way of knowing, as he says, "there must, therefore, be other ways of knowing... besides direct apprehension of sense-data and images".[7] Price also holds that sensing is a form of knowledge.[8]

The view, that sensing is a form of knowing[9], or sensing is a form of observation, which itself is a form of knowing, has been very strongly criticized.[10] Prichard says that sense-data

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are secondary qualities, dependent on perception, or on being perceived, so they cannot be known. He concludes that there are no objects of knowledge, so there are no sense-data.

In order to decide whether sensing is a form of knowing, or sense-data are objects of knowledge, we should remind ourselves of the distinction made between the two senses in which the term 'sensing' has been indiscriminately used. (1) Sensing, in the sense of the coming into existence of sense-data or sense-datum genesis, which is not wholly mental and not distinct from sense-data. (2) Sensing, sometimes used for a kind of direct awareness or direct apprehension of sense-data, which is mental and is in the mind. Now, the occurrence or genesis of a sense-datum is not by itself knowing it in a certain sense of 'know', yet how can I have or sense sense-data without, in some sense, being aware of them, since sensing sense-data *is* partly mental. It is possible that the moment a sense-datum occurs in our sense-field, some form of definite awareness arises. The two processes are so intimately related that they have often been taken as one. If we concentrate on sensing as merely the occurrence of sense-data, which is not a wholly mental process, the question arises, How can it be a form of knowledge? On the other hand, if we consider sensing understood as the direct awareness of sense-data, which is mental, and hold that sense-data are identical with their awareness, then sense-data themselves become mental. So we must recognise that two different processes are involved.

In these two processes, sense-data stand in two different relations to the mind. (a) In coming into existence of a sense-datum, the mind plays a partial causal role, that is, it is a standing condition for the occurrence of all sense-data that there should be no psychic blindness and general wakefulness for sense-data of sensation proper to occur. Certain characteristics of sense-data, which are traceable neither to the present stimulus nor to the intervening medium nor to the physiological factors, are

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attributable to the causal agency of the mind (or mnemic phenomena), for example, reading 8 instead of 3, and hallucinations and dreams, etc., where the mind alone creates a world, similar to the so-called empirical world. Thus it is, in part, a constitutive condition of all sense-data. (b) In direct awareness, on the other hand, the relation of sense-data to the mind is cognitive, that is, the mind is aware of these sense-data, as they occur or come to exist in our sense-field.

If we recognize that 'sensing' is a complex notion, and that sense-datum genesis and direct awareness of sense-data are distinct, then we can hold the following views:

(1) Sense-data are not distinct from sensing, taken as sense-datum genesis, which itself is partly a function of the mind though not wholly mental; and most sense-data depend in part for their existence on this causal relation to the mind.

(2) But their being is distinct from their direct awareness, which is a wholly mental process. The occurrence of sense-data and their direct awareness are not synonymous, yet they never exist apart.

There are no sense-data without direct awareness, yet this awareness alone does not constitute their being. So we can hold that as soon as a sense-datum occurs in the sense-field, as a result of joint action of many processes including the mind, it becomes an object of direct awareness. It is distinct from this awareness, yet depends on the percipient. The main reason, I think, why it is not possible for a sense-datum to occur in a sense-field without our direct awareness of it is that sense-data cannot exist without standing in causal relation to the mind, that is, the mind partly (and sometimes wholly), to use the old-fashioned term, generates sense-data; so whenever it is in causal relation it is also in cognitive relation to these sense-data, that is, they become objects of direct awareness. There is no reason why sense-data should not be objects of direct awareness simply because they depend on us (as Prichard's criticism

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seems to imply). After all, dream data are wholly (or almost wholly) generated or created by the mind, and we are directly aware of them then and there, without knowing that they are generated by the mind. In the case of veridical perception, mind is a part condition of the existence of sense-data in the sense explained above, and is also directly aware of them.

So, on our interpretation, we can say that Russell's and Moore's view, that sense-data are objects of awareness, distinct from awareness, implies that they took the coming into existence of sense-data for granted (Russell only in his early works) and did not say anything as to their genesis. Once sense-data come to exist (no matter how), they certainly become objects, awareness of which is distinct from their existence. So, in this sense, Russell and Moore were right in describing them as objects of direct awareness.

The next question is: Is direct awareness itself a form of knowledge or not? But before we answer this question we must now see (after noting the distinction between the two different relations of sense-data to the mind for which the term 'sensing' is used) what does the analysis of sensations into act and object on our view come to? Why was there such a difference of opinion that some philosophers thought that all sense-data are distinct from sensing while others denied it, and some allowed this distinction only for visual and auditory sensations? Taking sensing to mean sense-datum genesis we have seen in the case of all sense-data, whether visual, or auditory, or organic, that there is no distinction between the act of sensing and the object of sensing. The taste and the smell and the pain are not distinct from tasting, smelling, or having pain. But, later, as the objects of direct awareness (for which again the term sensing was often used), theoretically speaking, all sense-data can be treated as open to the act and object analysis. I can be as much directly aware of a pain in my hand (that is, a part of

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my total somatic field), and think and talk about it as of a red patch in my visual field.

But, ordinarily, we do treat these two kinds of sensations, namely, visual, auditory data, and the organic data (or to use Price's term, 'environmental' and 'somatic' data) differently, and find that the act and object analysis better fits environmental data rather than the somatic data. The reason is that we tend to identify our conscious selves with our felt bodies, or at least think that our conscious selves and our felt bodies, that is, our somatic sense-field (which consists of a collection of somatic sense-data, namely, touch, pain, pressure, thermal, skin, bone, joint, visceral sense-data), are one indivisible unit. So we do not see the distinction between our mental awareness and a somatic sense-datum. But, since environmental sense-data are not taken as parts of ourselves in any sense, as they are experienced at a distance from the somatic sense-field, that is, the body, they seem to ask for an act-object analysis. Hence the different treatment for the two kinds of sense-experience!

Now we may ask: Is direct awareness, as distinct from sense-datum genesis, a form of knowledge? (Verbally, the answer should be 'yes'.) Here we have to distinguish between the two senses of 'knowledge'.[11]

(1) If we can apply the term knowledge to a kind of direct immediate indubitable experience, called presentation of sense-data before the mind, then direct awareness is a form of knowledge. In this sense we could be said to know our sense-data. But the objection to this view is that, even if there is such a presentation of sense-data before the mind, we are never, in conscious adult experience, aware of any sense-data, we perceive physical objects. So how can sensing understood as direct awareness be a form of knowledge? We can answer it by suggesting the following: we can be said to know sense-data in the sense that, as far as immediate sensory experience goes, we directly know only sense-data. They are there before

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us and we sense them all the time, but we do not know them as sense-data. By not knowing them as sense-data is meant that we do not know their nature, their private momentary existence and their dependence on us. We take them to be parts of physical objects, possessing physical characteristics. In this sense, awareness of sense-data is implied in the perception of common sense physical objects, though not vice versa. Ryle, in *Concept of Mind*, further criticizes this view. He says having sensation is included in observation of physical objects. If sensation was also the same as observation (that is, they could also be observed), then we need further sensations to observe sensations, and then more sensation to observe those sensations, and so on *ad infinitum*. He says, it is as if having glimpses of.... Thus to have sensation is not to know, or being in cognitive relation to them. But as against Ryle's view we can hold that direct awareness is an *ultimate* form of consciousness. We perceive an object by means of sense-data, but sense-data are known directly and immediately without any intermediary. The two forms of knowledge are different, so it need not lead to infinite regress. Moreover, we can become aware of their nature on a little philosophical reflection, not in the sense that we expect to see something different, but we learn to distinguish between different elements in perception and understand the nature of the sensory element.

(2) If, on the other hand, we are to reserve the term 'knowledge' for complex mental activities, namely, recognizing, naming, etc., or for propositional knowledge as Ayer suggests, then acquaintance with sense-data cannot be described as knowledge in this sense. Sensing is always accompanied by mediate knowing, recognizing, naming, etc., but all these can be distinguished from sensing. In this sense, we do not know sense-data, though we can know propositions about them.

But there are such cases as my attending to one particular object in my visual field, for example, I am talking

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to you in a room. But there are a number of sense-data on the periphery of this field, called the sense-data of the things around me in the room, to which I am not attending at the moment. I am neither naming them nor describing them, nor even recognizing some of them. It is a different relation from the one I may be having to the things behind my back. (I may *believe* that they are there, but no sense-data exist.) Am I going to say that I know these peripheral sense-data or not? Their occurrence is accompanied by some kind of awareness. Is this awareness knowledge or not? The answer to this question can be both, yes and no, accordingly as we decide to use the term 'knowledge'. Though it is less confusing to use the term know in the second sense, when the philosophers described sense-data as objects *known* in direct apprehension, they used it in the first sense, and it is not a wrong use of the term 'know'.

To conclude our discussion, then sense-data stand in two different relations to the mind. We have seen that they are not mental in the sense of either being mental states or as inhering in the mind or as mental acts. We have seen that they depend on the percipient for being sensed. Sensing is not a wholly mental process (though 'mind' constitutes part cause of it). The 'percipient' is a wider notion than the percipient's mind. Sense-data depend for their existence, for being sensed (as a necessary condition), on the existence of percipient as a whole, and not only on the knowing mind. The two relations that mind seems to have with sense-data are: (a) cognitive and (b) causal. The cognitive relation consists in being directly aware of our sense-data and it can be regarded as a form of knowledge (taken in the first sense). As objects known in direct awareness, sense-data are distinct from their awareness though they can never exist outside this relation.

The other question was, To what extent are they causally dependent on the mind? Here we distinguish between different sense-data.

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(a) To some extent, all sense-data of sensation proper depend on certain psychical conditions being fulfilled, as for example, being awake, being conscious, etc.

(b) Organic sense-data are supposed to be more intimately resembling the states of mind in their being taken as parts of us, as against visual and auditory sense-data, which are supposed to be distant from us (that is, our perceptual body) in a very important sense.

(c) Images, data of dreams and hallucination are almost entirely dependent on the mind, since there is no external reality they could be referred to, and necessary sensory stimulation is also absent. But, in the next chapter, we shall see that even in sleep and darkness we are not completely devoid of tactual and auditory stimulation. So even in these cases the mind may not be the sole cause of these data.

Next, we shall see how sense-data are dependent on the body and the brain of the percipient.

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Chapter 8

SENSE-DATA AND THE BODY

The question to be discussed here is the relation between the percipient's physiological mechanism and sense-data. Again two questions are involved:

(1) Are sense-data cerebral, that is, are they phases of, or states of, the percipient's brain? This question relates to the nature of sense-data.

(2) The second is the causal question. If sense-data are not themselves cerebral, how far do they causally depend on the cerebral and sensory apparatus of the observer; and is the brain only one of the several necessary causes of sense-data or can it be regarded as a sufficient cause? Can we explain everything in term of the happenings in the brain?

It is obvious that sense-data depend on the physical existence of the percipient, in the sense that had he not existed sense-data would not exist either. We may ask a theoretical question: can a purely mental, bodiless being have sense-data supposing that it could have perceptions of some kind? If it had no senses, which presumably it would not have (because sense-organs are parts of the physical body), then, whatever those perceptions, they could not, strictly speaking, be called sense-data. But human beings like us cannot have sense-data without the requisite physiological existence. Then, the occurrence of the type of sense-data depends, to a large extent, on our bodily position, angle, posture, etc. What particular sense-data (size, shape, colour, depth, length) I will sense, and which part of my sense-field they will occupy, will depend on the

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angle at which I am viewing a thing and also on the state of my sense-organs and my cerebral apparatus.

So far this is commonplace and is accepted by everyone. But we also have the evidence of a very intimate and special relation between the sense-data and the brain. The evidence lies in the fact that, if we sometimes loose one or more of our senses, for example, eyesight or sense of smell, as a result of injuries to the brain centres, then no sense-data of sight or smell exist for us. Physiological science asserts that this relation is causal. It is owing to the action of certain physical processes on the sense-organs, nerves and brain that certain sense-data occur. It is conclusively established that, unless the sensory and cerebral mechanism is in tact even if certain physical processes did take place, sense-data would not occur. So the question is, Are sense-data not themselves cerebral events ?

This view cannot be accepted in the straightforward sense. There is an objection to it — parallel to holding that they are mental, that is, it is very hard to believe that when I am acquainted with a red sense-datum, or a bad smell, I am actually acquainted with red or odorous parts of my own brain. It would mean that the brain is red or green or sweet or smelly. Whatever we ordinarily call the processes of the brain are quite unlike the processes of becoming, for example, red or sonorous. Moreover, if expanded sense-data are parts of the brain, we shall have to say that the brain is expanded too. So is it possible to hold this view on some different interpretation of the brain ?

Price[1] considers the view (which he later finds untenable) that the brain is not merely a piece of matter, subject to physical and chemical processes, but is a living organ also. The genesis of coloured, extended and auditory data is very different from the physical processes of freezing and combustion, but is it so very different from breathing and digesting ? One feature common to both is the part they play in the preservation of life. So can

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we not say that sense-data are cerebral if brain is to be taken as a sensorium, that is, in its vital aspect ? In this sense, sense-data would be related to the brain and could be called vital.

But our first objection to this view is that there are far more differences between such processes as breathing, digesting, etc., and sense-data than there are common points. Some of them are as follows:

(1) These processes can go on while we are in a dreamless sleep, but sense-data do not exist in dreamless sleep.

(2) While awake, we can have a certain amount of conscious control over sense-data, as for example, by closing our eyes, or ears, removing the object, moving away from certain regions of heat or cold, we can shut off, change, replace, our visual auditory, tactual or organic sense-data. We can intensify them by being more attentive to them. The processes like breathing, digesting are not in our control in the same sense.

(3) Sense-data are taken as signs of the existence of some other reality, that is, the physical objects. If we had no sense-data, we could not know that anything existed. But the processes of breathing and digesting take the independent existence of that reality for granted (namely, the physical body) and are only indications that this object is alive.

(4) Breathing seems very different from a coloured patch or a loud noise.

(5) There is a sense in which you could be said to observe my breathing, even my process of digesting (that is, with scientific instruments), but sense-data are private and it is not possible for any one to observe my sense-data. It is not merely a question of language or convention (as some philosophers think),[2] that is, the reason why sense-data are regarded as private is that we give no meaning to such expressions as "two persons can have the same sense-datum" or "you can observe my mind". But as a matter of fact, with normal eyesight you

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cannot see the kind of blurred appearances that I, being short-sighted, see without my glasses. It is my private experience and as we are two separate beings we cannot observe each other's experiences.

So we can conclude that there is very little reason to hold that sense-data are physiological processes. There is another point. These processes are physical, but if we can find in some other way (and not assume) that sense-data are not physical, then there is no reason to equate the two.

Price's main objection to the view — that sense-data are cerebral — is that as far as extended, visual and tactual sense-data are concerned, if they are in the brain then it could be said that the brain is in two places at once. They cannot be 'spatially' inside it, otherwise it is impossible that they manifest physical objects to us. They only do so by purporting to be, and in some cases actually being, constituents of the physical objects.[3] Secondly, if sense-data are in the brain, they must be much smaller than the things to which they belong. Thirdly, we cannot determine the situation of sense-data. When we walk round a wall, we see one sense-datum near another, and related to it. But, in this process, our brain has moved from one point to another; so how can sense-data which are, on this view, in the brain remain adjacent? But we shall see these particular difficulties which Price raises can be answered on Russell's later view of the nature of sense-data.

Russell, in his later works,[4] holds that our sense-data (he uses the term 'percept') are in the brain. Now, stated thus, it gives rise to ceaseless criticisms and needs to be explained at some length. Russell arrives at this conclusion by accepting scientific causal theory of perception (which we shall discuss later). Our sense-data are considered as events at the end of a physical causal chain, which terminates in the brain. Related thus to the physical events, they could be treated as the subject-matter of physics.[5] Now we should ask two different questions.

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(a) Are sense-data themselves cerebral events, that is, parts of our brain? (b) Is the location of sense-data in the brain, that is, whatever kind the particular sense-data may be, are they situated in the brain (just as we see images on the cinema screen which are not parts of the screen)?

According to Russell, all the events which are directly known are mental. Physical events are inferred.[6] On this definition, sense-data become mental events. They are supposed to be members of the group which is the physical brain of the percipient, as they come at the end of a physical causal chain which ends in the brain. So sense-data must be constituent members of the brain. Price's objection — that if sense-data are in the brain, we shall have to hold that the brain gets enlarged and is in two places at once — can be answered by pointing to the distinction which Russell draws between sensory and physical brain, sensory and physical spaces. Sense-data do not inhere in the perceptual brain. The percept of the brain is perceived to be inside the percept of the head. According to Russell, all the sense-data which are outside the perceptual body, the perceptual body itself and the perceptual space, are all inside the physical brain. So the entire notion of the brain is changed. It is to be understood as a container which contains as its parts the entire perceptual universe, and this universe has some rough similarities with the physical universe.

Now, this view is not logically contradictory, though it has been criticized a great deal. But there are other difficulties, which we shall examine in detail later. Here we briefly mention a few:

(1) By definition, physical events composing a physical brain are unobservable, they are only inferred. Sense-data are supposed to be *perceptible* and are *mental*. So, if they, in part, compose the physical brain, then the brain cannot be called simply a physical object. It is itself partly mental and partly physical; so how can sense-data be the same as physical events? They are not like other *unobservable* physical events in the brain.

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(2) Secondly, they are coloured events, while physical events presumably are not. Unperceived physical events presumably consist of molecular or electro-chemical processes. So the last link of the physical causal chain, which is a brain event, would similarly consist of some molecular arrangement. This can be said to *result* in our perception of a red-coloured patch. It does not necessarily follow that this patch of red colour is also in the physical brain.

(3) On Russell's view of neutral monism, the concept of perception loses its meaning. Who perceives or what is perceived? There is no mind, only some mental events which are members of the physical brain. Does the brain perceive part of its own self? Does the physical body perceive part of its own brain? We fail to understand.

(4) It is pointed out that if sense-data were in the brain, we cannot know that they are, because causal inference, which is all we have to fall back on, to inform us of the existence and nature of material things, will not enable us to say that we have a brain at all.

For these reasons we conclude that sense-data are neither cerebral events, nor situated in the brain.

Now we come to the second question. Are sense-data causally related to the brain? What is the nature of, and evidence for, this relation? There is evidence from neurological and physiological sciences[7] that a physical causal process is involved in perception. If we look at a circular plate, then the light rays reflected from it strike the eye and are focussed on to the two retinae and set up a roughly circular pattern of stimulation on the mosaic of the cells of the retinae. This stimulation causes a discharge of impulses along nerve fibres leading to the brain and eventually evokes a specific spatio-temporal pattern of impulses in the cerebral cortex. (We need not mention certain complicated patterns.) In hearing a sound, a different cortical representation occurs. If one hears a note of a certain cycle (for example, 3,000), a sound wave of that frequency strikes the

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ear and sets up vibrations in the part of the cochlea responsive to it. These vibrations set up impulses in the auditory nerve fibres which, in turn, excite cerebral cortex. It is to be noted that these impulses travelling along the nerves do not resemble their stimulus, but depend on the intensity of the stimulus. Transmission is not along a single path, or fibre, but each optic and auditory nerve is a bundle of many fibres and the perceived qualities depend on the set of fibres along which the impulses travel to the cerebral cortex.

As a consequence of these patterns of activities, it is said that we experience sensation or a group of sensations, that is, a coloured patch of a circular shape, or a high-pitched sound. The occurrence of this brain activity seems to be a necessary condition for the experience of the appropriate sensation. Now, our question is — Is it only a necessary condition or a sufficient condition ?

Broad discusses this point at great length in *Scientific Thought.* It is important because, if certain brain events could be shown to be the necessary as well as sufficient condition for the existence of the sense-data, then the conclusion might be that physical objects could be dispensed with altogether as part causes of our sense-data. So we must carefully examine the evidence for the view that it could be a sufficient condition.

Broad holds that a sensation normally has three conditions. (Here he is using the term sensation to include both sense-data and sensing. So condition for sensation will also hold for sense-data.) (1) Originative condition, that is, occurrence of physical event, for example, striking of a bell; (2) external and internal transmissive conditions, that is, the intervening medium, such as the air, light, and the nerves of the percipient respectively; and (3) productive conditions, that is, the brain event, which produces the sensation. He regards sensation as a very different kind of event, belonging to a different strand of history, namely, sense-history of the percipient.

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Now, if this brain event, by itself, is sufficient to produce the sensation, it follows that all the other conditions are only 'dependently' necessary conditions of sensation — in so far as they are necessary to produce the brain event, which is the productive condition of the sensation. If, on the other hand, they are also necessary to produce sensation, in the sense that the sensation would not occur in their absence, then they are 'independent' necessary conditions, and the brain event cannot, by itself, be sufficient.

Broad argues that these dependently necessary conditions can also be independently necessary. It is true that sometimes sensations can be produced artificially, as for example, in physiological and psychological experiments, visual or tactual sensations can be produced as a result of a direct electrical stimulation of the appropriate part of the cortex. Thus the subject reports that the sensation of touch seems to come from that part of the body which is related to the stimulated point in the cortex, for example, hand or foot. But in these cases also, there is some sort of originative condition and the brain event does not, by itself, produce the sensation. So we cannot be sure whether the brain event, by itself, is both necessary and sufficient condition for the production of sensation, and that originative and other conditions are not also independently necessary and jointly sufficient for such production.[8]

Are there no cases at all where sense-data seem to be produced without any originative conditions, that is, without occurrence of physical events ? There are cases like dreams, hallucinations and images, which seem to be wholly internally caused, and an external stimulus is wholly dispensed with. Here experiences similar to the normal experiences seem to have very different originative conditions. The question is, To what extent does the possibility of such occurrences as dreams, hallucinations, etc., show that sense-data depend on the brain (or the mind) and how far can we dispense with the physical object ?

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It is in the experience of dreams and hallucinations that we find evidence of sense-data being produced without physical causes. But one point should be noted. It is very difficult to say that, even in dreams, our auditory and tactual data never have originative conditions. Since, even at night, our rooms may not be altogether devoid of noise. The dreamer can himself make noises such as snoring, talking in his sleep, and some noise may also be produced by our internal system, for example, breathing, beating of the heart, etc. Similarly, in tactual experiences, we are even less sure whether they do not have originative conditions of some sort as our bodies are always in contact with something; even while we are asleep our bodies are on the bed. Or our internal organs can produce some tactile sensations.

Thus it is only in visual experiences in dreams (since we are in complete dark) that some good evidence is found, that something like normal sensation occurs without originative conditions, and the brain event here may be a sufficient cause. Yet we cannot prove that external conditions cannot also be independently, as well as dependently, necessary conditions. So Broad concludes that "empirical facts and *a priori* principles about causation justify little more than complete agnosticism on the subject".[9] But it is rash to assert that brain event, by itself, can be sufficient, since in doing so we are apt to neglect that there are certain special continuant conditions which must be fulfilled — such as structural integrity of the brain, general wakefulness, certainty that there is no psychic blindness, mnemic conditions (for some sensations) and, in general, the body being in tact.

So we reach the following conclusions about the relation between sense-data and the percipient. The relation between sense-data and the mind seems to be as follows: the mind is a part cause of our sense-data and apprehends them, since it is very difficult to understand how sense-data can exist or come into being without our being aware of them in some sense; and it can

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entertain past sense-data, that is, remember them or use them in various other mental processes, such as inferring, judging, remembering, etc. Another part cause of the coming into existence of our sense-data seems to be the whole of sensory and nervous structure, and the brain of the percipient as discussed above.

Sense-data are not mental or cerebral, though they are related to the mind and the brain both.

Now, a criticism is brought against this causal account of perception. It is said that the theory holds that what we perceive are private sense-data. Even our perception of nerves, brain, etc., on which this theory rests is based on sense-data. What justification have we on this view, to infer that this knowledge is valid, or even that a physical world exists?[10] So it blows its own premises.

Now the question — How is the inference justified? — will be discussed later, but the theory need not deny the existence of physical objects like brain, and it does not. It only asserts that their existence and nature are only known indirectly through sense-data, which most probably do not resemble their physical causes, because the moment a light or sound wave comes into contact with a human eye or ear it undergoes transformation and we experience a coloured patch or a certain sound. Thus there is nothing in this theory that necessitates this conclusion, that it blows its own premises.

But from the possibility of some sense-data actually occurring without physical stimulation (combined with certain other reasons) there is a door open for a 'theoretical doubt' whether physical objects are really needed, in some sense, for the production of some sense-data. How can we justify our belief that physical objects are either causes of our sense-data or (as common-sense thinks) are identical with these data? This is the topic for the discussion in the next part.

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Part IV

RELATIONAL (physical)

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Chapter 9

THE MEANING OF THE TERM 'PHYSICAL'

The general assertion of the sense-datum theory, so far developed, is that we do not perceive the physical reality directly, but our sense-data. (Some of Moore's views and phenomenalism are exception.) Yet the physical reality, if known at all, is known to us, somehow, only through sense-data. Now, this assertion, that "we do not perceive the physical world directly", arouses an immediate and instinctive reaction among a very wide circle, including both philosophers and laymen. In order to understand and evaluate this assertion, we must first understand:

(1) The meaning of the term 'directly perceive', that is, what mode of perception it is and what are its implications. We have seen already in Chapter 4 what this term does signify.

(2) Secondly, we must understand the meaning of the term 'physical' or 'physical object', and this is our present field of inquiry. We have seen that the term 'sense-data' generally applies to such entities as coloured patches we see, sounds we hear, and different kinds of organic sensations, and these are partly dependent on the percipient and are not regarded as parts of the physical objects. About this there is a general agreement among philosophers. But when they say that we do not perceive the physical reality directly, they do not mean the same thing, nor do they use the term 'physical' in an ordinary sense, nor in any other unanimous sense. Consequently, they visualize the relation of sense-data to the physical world in many different

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ways. Hence the first important question is — What do they *mean* by 'physical' reality which, they hold, we do not directly perceive? Only then we shall be able to ascertain in what relation do sense-data stand for different philosophers, to the physical objects, on their own meaning of the term 'physical'. (The answer to this question will determine the answer to the question of whether we, in fact, perceive physical objects directly or not.)

The term 'physical object' seems to be so innocent, familiar and commonplace that it is very easy to be deluded into thinking that it means any one thing, or that there can be no question of not seeing physical objects — what else do we see all our lives, etc., etc. Another point emphasized recently is whether it is linguistically correct or not to say that we perceive physical objects directly (if 'directly' is opposed to 'infer', then it is argued that we do not infer physical objects). Language and logic of our grammar allow us to use these words — 'I am directly seeing a book' — significantly and correctly. But, as we shall see, the term 'physical' has many different uses in the ordinary language, philosophical language, psychological language and scientific language, and they are all supposed to be in some sense 'correct' uses of the term.

So, what do we mean by the term 'physical object'? What does the assertion 'there are red books whether I see them or not' imply? This proposition is in some sense true. In what sense is it true? What are the books I am referring to? Am I referring to the red patches in my visual field? Or, when I do not see them, do I refer to actually existing entities? Or am I just saying that, if I go, as for example, in my room, I shall have certain 'red book-like' sense-data? If I am referring to unperceived entities, then what sort of entities are they? Are they really red and extended and hard as my sense-data are, or different? If different, what is their nature? What are my reasons for concluding that they cannot be identical with my sense-data?

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Such questions are answered both by common sense and science. Let us first see what does common sense say.

The common sense notion of a physical world is — things are as they seem. For common sense, all (but a few) appearances, or sense-data we sense, are parts of physical objects. Thus, the physical object is the whole of these appearances. Common sense also believes these to be existing independently of us, and having characteristics of permanence, objectivity, publicity, etc. So, for common sense, the analytic description of our perceptual experience, such as seeing a red book, could, in sophisticated terms, be — 'I am directly seeing a red surface which is part of the book'. By the book is meant an extended, durable whole of red colour, which will exist in the same form whether I perceive it or not. Now, since the red patch I see (that is, my sense-datum) is taken to be a spatial part of the book, it also has all those characteristics which the book is supposed to have.

Now, science also uses the concept of 'physical reality', but its world consists of what we call entities of physics, such as electrons, protons, neutrons, positrons, etc. For science, these are the physical existents; the sensible colours and sounds and other qualities have merely subjective existence, though they are real within the framework of human experience. It is these entities that are regarded as permanent and independent of our perception.

On the basis of these two notions, the following characteristics can be taken to characterize a 'physical object'. (Then, taking these characteristics, not exactly as our definitions but as marks or criteria of a physical object, we shall distinguish between various elements that go into the concept of the common sense physical object and, later, see where our sense-data stand in relation to these physical objects.)

A physical object should be capable of existing for some time, that is, must be durable, semi-permanent; it should be independent of, and common to, the perception of many different

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observers. (It does not necessarily mean that they should all actually perceive it, but it should somehow be commonly connected with their perception.) Next, it should be capable of some kind of causal characteristics and possess certain spatial characteristics. These are the characteristics about which there is an agreement between the common sense and the view of the scientists, that they must belong to an object, if it is to be legitimately called a *physical* object. But the controversial question is whether all physical objects are at least in principle perceptible or not (though some may never in fact be perceived). Common sense would hold that the world of physical objects is certainly perceived; science would assert that the physical entities never enter our actual perception.

How are the claims of common sense and science reconciled ? We believe that the objects which common sense thinks it perceives are composed of entities of physics, namely, electrons and protons. (We shall, later, see whether this view can literally be held.) Here the question is — Where do our sense-data come in ? Common sense objects, in being regarded as permanent, independent and common to different observers, have all those characteristics which the entities of physics are supposed to have, yet entities of physics are not perceptible, and common sense objects are supposed to be within the realm of perception. Now, being perceptible is a characteristic of the sense-data. But our sense-data are, as we have seen, very different from the notion of physical objects. They are private and fragmentary. They change with the changes in the percipient. They cannot exist unsensed. So all our sense-data, which would be called different appearances of a red book, cannot be identical with the red book (and there are reasons for thinking that even one appearance cannot be known to be the book). Thus, if sense-data are not identical with the book, they cannot have all the characteristics of permanence, independence of perception, etc., which belong to the physical object. Yet

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the awareness of the external world is possible only through sense-data. So the question is — How do we then explain our notion of physical objects? One point which must be remembered throughout our inquiry regarding the notion of sense-data is that it is *not* a psychological question. We must admit that psychologically our starting-point is the notion of the physical object. Thus this question must be interpreted to mean — How do we explain, in terms of sense-data, our already existing or established beliefs in the physical objects with such-and-such characteristics, and having explained it, do we justify it or reject it?

The simple answer which is generally given (with variations which we shall for the present overlook) is this:— our perceptual experience, expressed in a perceptual judgement, 'This is a red book', where by 'book' I mean an object with all these physical characteristics, goes beyond our sense-data, or the immediate evidence of our momentary experience which consists in sensing just one red patch. As we sense a sense-datum, immediately certain associations or expectations, that were formed in the past, are evoked or a sort of unconscious inference takes place; and then our conscious total normal experience is not that of just sensing one sense-datum but as of being aware of the whole object. The reason why common sense does not recognize the fragmentary character of our sense-data is that we never consciously sense a sense-datum in isolation. It is always a part of a sense-field, which is taken to be continuous with a series of sense-fields (which are actually only successively obtainable). Now, the series of obtainable sense-data which common sense takes to be a physical object is never consciously inferred (that is, no process of reasoning takes place), it is only an unquestioned acceptance of the total situation.

If this is a correct description of an ordinary perceptual experience, then it follows that we can distinguish two elements in the perception of a common sense physical object like a book:

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(1) the actually sensed element, namely, our sense-data, and (2) all those associations that accompany the sensing of actual sense-data, with an underlying belief that these perceived objects will persist as they are. The physical object, as common sense conceives it, covers both these aspects. Common sense does not distinguish between the two, and attributes the characteristics of independent existence, permanence, etc., to the fragmentary sense-data (with certain reasons and justifications for it) and holds that they are physical existents.

Now, if the notion of a physical object, or a part of it, is an inference, let us see in how many senses it is an inference, and what then is the relation between sense-data and physical objects. Only then can we see the cash value of the much-criticized assertion — "we never perceive physical reality directly, but only our sense-data".

Even if sense-data were parts of the physical objects, we could still not immediately see the whole physical object, but just a part of its surface. Usually sense-data are not regarded as parts of physical objects, but as fragmentary particulars dependent on the percipient. Now, to say that a physical object exists may be taken to mean that, on sensing certain sense-data, we infer (in a very loose sense) that we shall sense further sense-data of such-and-such kind, when certain conditions are fulfilled. This is phenomenalism, and on this view, what common sense calls physical objects would be special groups of actual and obtainable sense-data. If true, then on sensing sense-data, we in a sense see physical objects.

But our sense-data, as dependent on us in the sense explained earlier, do not exist unsensed and, by themselves, neither individually nor in groups, can be regarded as independently existing physical objects, and cannot have all those characteristics which the physical objects are supposed to possess. To account for these characteristics, for which we find evidence in our experience, we postulate on the evidence of science, a

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common, permanent, independent physical 'cause' of our sense-data, which persists through sensory changes and accounts for the grouping and the behaviour of the sense-data in complexes. Now, this cause is never perceived, but inferred. Sometimes this cause is called the 'real physical object', or the 'physical reality', because it is supposed to possess categorically all those physical characteristics of permanence and independence of perception, etc., which common sense assigns to its objects of perception.

Now, by the unobservable physical object is meant something like this 'cause' which is inferred and cannot be identical with the groups of sense-data. For the purpose of philosophical inquiry, the actual sensory aspect of our so-called perception of the physical world can be isolated from the inferred one, and termed 'sense-data' after its private and fragmentary nature and dependence on us are recognised. It is the inferred part which has been called 'physical'. *Thus, if there are some inferred entities, and if they are to be called 'physical', then the assertion — "we never perceive physical objects directly", is justified.* We do not see the physical existents, but only their effects. The phenomenalists, on the other hand, have mainly emphasized the perceptual aspect of common sense things, that is, series of sense-data, and rejecting the rest, named this perceptual aspect the 'physical object'. Hence, on phenomenalism, to talk about sense-data becomes another way to talk about the physical object, that is, just the choice of a different language.

Is it really only a question of language? We have argued that the question whether there is any permanent independent entity existing unperceived besides our sense-data, which is inferred from the sense-data — is very much a factual question and requires philosophical and scientific investigations. The only question of language and definition is this — Whether we are going to name this independently existing entity (if it exists) a 'physical object' or series of sense-data 'a physical object'

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or both together 'a physical object'? (We shall discuss these three alternatives later.) It is true that we can use a term as we like if we clarify our meaning. The term 'physical object' can be used either (1) as common sense does, or (2) as physics does, or (3) as phenomenalists do. But on any one of these views, we have to explain the so-called problems of the perception of the physical world, that is, the relation of our sense-data to the physical object, and our perceptual beliefs in the existence of common sense physical objects.

In the light of all these remarks, we must examine the following views regarding the relations between sense-data and the physical world:

(1) Identity view — Sense-data as parts of the surfaces of physical object.

(2) Group view — that is, Phenomenalism:

(a) Physical objects as groups of sense-data, to be illustrated by:

(i) Russell's Logical Constructions;

(ii) Price's Families of Sense-Data;

(iii) Physical Objects as Groups of Unsensed Sensa;

(b) Linguistic Phenomenalism.

(3) Causal view. Physical objects as causes of sense-data.

In the next chapter we shall examine the first alternative — Are sense-data parts of the surfaces of physical objects?

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Chapter 10

MOORE'S IDENTITY THEORY

In the preceding chapter, we saw that the term 'physical object' can be and is used differently consequently, the relation between sense-data and the physical objects is visualized differently. Its most common use is found in the propositions regarding ordinary common sense objects, such as tables, chairs, books, etc. Common sense believes that we perceive the surfaces of such physical objects directly. Now, since our direct experience consists of sense-data, the only way to maintain common sense position would be to regard sense-data as identical with parts of the surfaces of physical objects. We have seen that Moore's definition of 'sense-data' is different from the generally accepted definition, namely, that sense-data as dependent on the percipient. For Moore, whatever is directly apprehended is our sense-datum. It follows that, if some physical realities are directly apprehended, they are our sense-data. Moore meant exactly what the definition implied.

Moore, by so defining his sense-data, that it is logically possible that they are identical with parts of the surfaces of physical objects, tried to defend this view (which, for short, we shall call the 'identity view') for a number of years, but gave it up in the end. The logical possibility, of course, cannot be denied, but certain arguments[1] and other empirical considerations make it very improbable that they could be parts of the surfaces of physical objects. Even while he was inclined to favour the identity view, he could neither give a satisfactory account of it nor was he himself fully convinced of its validity. His failure to

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maintain it, in a sense, marks the problem of the perception of the external reality for us.

Moore held different views about the relation between sense-data and physical objects at different periods of his philosophical inquiry. In the beginning,[2] in 1914, though he believed that sense-data could not be identical with parts of the surfaces of physical objects, — the main reason being the relativity of sense-experience — later, since 1918,[3] Moore seems to have been giving more and more weight to our common sense beliefs. At that time, he attempted to reconcile these beliefs (concerning the existence and perception of physical objects) with the relativity of sense-experience, but later he just accepted them as certainly true.

What was Moore's problem ? What was the problem which had puzzled him for a very long time, and which he had attempted to solve in a number of different ways ?

The problem that he faced from 1914 to 1953, stated slightly differently in his various works, can be summarized in the following way:

Moore starts by taking the knowledge of the physical objects for granted. It is not that we only believe, but we 'know' physical object propositions with certainty to be true.[4] But we do not know for certain what their correct analysis is. Now, the judgements about sense-data are regarded as the analysis of the ordinary physical object propositions such as 'This is a door', 'This is an inkstand', 'This is a human hand', etc. This knowledge is based on two propositions, 'I see this' and 'This is a human hand'. The question is — What do I know or judge when I know or judge that this is a human hand ? He says that we know that 'this presented object' (that is, the object in my visual field) refers, not to the whole of a human hand or an inkstand, but, at the most, to that part of its surface which is turned towards us. He makes a further distinction between transparent objects, such as a soap bubble or a drop of water and

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opaque solid objects. In the ordinary sense of 'see', we do not see the whole hand in the same way as we can see a soap bubble. So, when I judge 'this is an inkstand' or 'a human hand' it is obvious that I am not judging of 'this presented object' that this is the whole inkstand or human hand. But it is not so obvious in the case of the judgements regarding a soap bubble. Sense-data are said to be the *sort* of things about which such judgements are always made; they are *'ultimate subjects'*[5] of a judgement. They are not what mediates between physical objects and the mind, so that the judgement is only about the physical objects, and not about sense-data, because, according to Moore, if there are any physical objects, they are not given independently of our sense-data. They are identified as the things which stand in a certain relation to this sense-datum. Thus the judgement — 'This is a human hand', 'That is a penny' — is about both, the sense-data and the physical objects. The main question is — What is the *relation* between them, that is, between the elliptical sense-datum and the penny, or between 'this presented object' and the human hand?

Again, in a later article,[6] he says that 'this' or 'that' in such judgements is short for a definite description in Russellian sense. In this case, the definite description for which 'that' is short is — "the object of which this is a part of the surface". So we know the object only by description. If 'this' or 'that' is short for a definite description, then the proposition at once refers to two objects, that is, the sense-datum and the physical object. The puzzling question before him is this. In the case of both, transparent and opaque objects, when we are supposed to see a part of the surfaces of a physical object, different people see different sense-data. Are they or are they not identical with the same part? If not, then what is the relation between the two?

Before we examine his different solutions, we must question Moore's assumption, or the starting-point, that we know physical

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object propositions with certainty to be true, though we may not know their correct analysis. Can we claim to 'know' the existence of physical objects on sense-datum theory, even on Moore's view of sense-data (which is no doubt different from the more common view as well as from our version of the theory) ? In 1918, he takes their certain knowledge for granted; later, in 1925, he even tries to defend such common sense beliefs in the existence of physical objects, as — there are human beings who have lived on the surface of earth for a long time in space, time, etc. These beliefs, in their fundamental features, are accepted by Moore as wholly true and known with certainty. One feature of common sense beliefs, he argues, is that the mere fact that we hold such beliefs refutes any 'philosophical' attempt at contradicting them, because by a philosopher we mean a human being who has lived on the surface of the earth,[7] etc. . . . and the rest of it is also true. It is so because, according to him, the assumption is that there is an ordinary meaning of these physical object statements, and in that sense they are true. Now, there is a view which holds that the question 'Are physical object propositions known with certainty' can only be answered by asking 'What do you mean ? If you mean so and so, then . . .' This view, according to Moore, is 'profoundly mistaken'. It is confusing the question, whether we understand its *meaning*, with another, "whether we know what it means, that is, the correct analysis of it".

But it is possible that, if we do not know the correct analysis of the statements expressing common sense beliefs what we know *may* be wrong. In that case, can such beliefs be said to be known with certainty to be true ? In order to know the correct meaning, it is important to analyse the notion of the physical object and, after the analysis, we may discover that it is not so simple as common sense takes it to be, but involves a number of factors, which cannot all be said to be known with certainty. What do we perceive ? What is it that exists ? What is the

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mode of its being ? How do we know it ? These are the questions which (once we have distinguished the different elements contained in the notion of a physical object) may only be answered by asking "What do you mean ? If you mean so and so then...." So such views to which Moore refers cannot be so 'profoundly mistaken'.

The purpose of common sense belief is not to discover general philosophical truths, but to be of pragmatic value for the preservation of life. So they are based on hasty over-generalizations from over-simplification of our sense experiences. The exceptional and rare cases are never seriously considered. It was, for example, once universally believed (and may still be believed by some) that the earth is stationary and the sun goes round it from east to west. Now, for practical purposes, this might hold, but it cannot explain, for example, the eclipse of the sun and the moon. So, though it was a common sense belief, it had to be questioned and was discovered to be false. Unless our similar beliefs are properly analysed, we may not really know that they are true. The analysis and clarification of such beliefs bring into light certain hidden features and may force us to give some of them up, or visualize and understand things differently and, finally, may lead to scientific discoveries and inventions, which would have been impossible had we not abandoned the common sense beliefs. If so, must we insist that all the common sense propositions are wholly true and known with certainty ?

All that Moore could be entitled to say, which is true, is that, due to the influence and unquestioned acceptance of tradition, we come to have and entertain many common sense notions which become very deep-rooted convictions with us. We *feel* absolutely certain about them, and the course of our sense-experience is such that they are mostly justified by it. But this does not make them conclusively and absolutely certain. Mere subjective certainty is no guarantee for the absolute objective truth.

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Now, if Moore can prove that our sense-data *are* identical with physical objects and if he can show that we *know* that they are identical with parts of the surfaces of physical objects, then he is justified in holding that we 'know' the existence of physical objects with certainty. We shall examine his various attempts at defending this identity view.

So we are back to our original question — What exactly is the relation between sense-data and physical objects ? When I judge on the basis of 'this presented object' that 'this is a human hand', is the relation that of identity ?

Moore has given different answers, from time to time, which can be summarized as follows:

(1) At first in 1918, he was 'inclined to favour' the view, in spite of the difficulties, that sense-data were identical with the parts of the surfaces of physical objects.

(2) Then in 1925 in *The Defence of Commonsense* he left the question open.

(3) Again in 1939 in an article, "Proofs of External World",[8] he asserted direct perception of physical objects, implying the identity view.

(4) Later, in 1942, he was greatly puzzled and felt like holding both of the two contradictory propositions at the same time, namely, that sense-data were, and also that they were not, identical with the surfaces of physical objects.[9]

(5) Finally, in 1957,[10] he saw that they could not be identical with the parts of the physical surfaces; so the relation was not that of identity.

In spite of having all these alternatives before him, he could not finally decide what the relation actually was, and said that no philosopher had so far been able to answer this question.

Let us examine each of these five propositions mentioned above.

(1) In *Some Judgements of Perception*, 1918, Moore was inclined to 'favour' the view that sense-data were parts of the surfaces of

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physical objects. So, when we make a judgement like 'this is a human hand', we judge about the sense-datum, as is natural, that it is itself part of the surface of the human hand. So the judgement is about both, and what is true of the physical object is true of its part.

Now, there is a serious objection to this view, which springs from the relativity of our sense-experience, and Moore is not unaware of it. Our sense-data differ from person to person, and for the same person at different times, depending on the bodily position and physiological and psychological state of the observer, light conditions and the intervening media, etc. How can then so many different sense-data be identical with the same part of the unchanging physical surface ?

Moore tries to explain it by holding that, when two sense-data are perceived as different from each other, for example, the size of a tree seen from the distance of one hundred yards, or of one mile, the latter size is not 'perceived to be' smaller but only perceived to seem smaller.

But this view seems contrary to the facts. It is true that we do realize that a smaller appearance of the tree is not what is ordinarily accepted as the 'real' size of 'the tree', but the appearance is for us as objective and real as the so-called real appearance. It can be photographed exactly as it is seen. It is not perceived to 'seem' smaller, but it is smaller and is perceived to be as such. It is only the physical object which seems smaller and not the sense-datum. We have argued this point earlier, in Chapter 6. Moore holds this view because he does not regard sense-data as 'representatives' of the physical objects, but identical with parts of physical surfaces, and if they are such parts they can appear to be smaller. But this identity view cannot itself be held. Moreover, on this theory, our entire direct experience is liable to be wrong, or at least uncertain, and there is no way of attaining any certainty about things.

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In view of the relativity of experience it is not possible to hold this identity view.

(2) In the further development of his theory, in *The Defence of Commonsense* in 1925, Moore does not altogether give up this position, but leaves the question open[11] that sense-data may or may not be identical with the physical surfaces. He says that it is natural to take the sense-datum as identical with the part of the physical surface, yet it can also be doubted. Now, if on the one hand he holds that our direct experience consists of sense-data, and yet he is not certain that they are identical with parts of the physical surfaces, it follows that probably we do not see physical objects directly. If direct perception of physical objects is ruled out, with it goes the 'certainty' of common sense 'knowledge' regarding the existence of physical objects.

(3) Though in *The Defence of Commonsense* Moore does not explicity assert direct perception of the physical objects (the question is left open), later in *Proof of an External World*, 1939, Moore asserts the existence of the external world on the basis of direct and immediate perception, without giving any philosophical arguments for it. He says that if he can prove that there exist two human hands, he has proved that there exist two physical objects external to us. He thinks he can give 'rigorous proof'[12] by holding up his right hand and saying 'here is one hand', and doing the same with the left and repeating 'here is another hand'. So he has proved the existence of two physical objects.

A proof, according to him, must satisfy three conditions: (a) Premises which are adduced as the proof of the conclusion should be different from the conclusion. (b) Premises should be known to be the case. (c) Conclusion should really follow from the premises. Moore asserts that his proofs satisfy all these conditions. His premise is different from the conclusion, as the conclusion only is that 'two human hands exist' and the premise consists of so many gestures and words; he thinks that he

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certainly knows his premise, and the conclusion did follow, that is, if there is one hand here now, and another there now, it follows 'conclusively' that two human hands are in existence now and also that many other physical objects exist.

But Moore cannot consistently hold this view of direct perception of physical objects on his own definition of sense-data. We know the existence of every object through sense-data. Therefore, if two hands are known to exist, it is only because we have sensed certain kinds of sense-data, that is, hand-like sense-data. On sense-datum theory the possibility of holding that — just on sensing two sense-data we can conclusively assert that two external physical objects exist — rests on showing that sense-data are identical with parts of the surfaces of physical objects. But (a) Moore is not certain of their identity, as he leaves it open. If he is not certain, how can he assert that by holding up his two hands, he has conclusively proved that two physical objects exist ? (b) In this article, Moore asserts the existence of the external world by giving instances of direct and immediate perception of something and taking that to be the physical object. But it will not convince, for example, an idealist or a phenomenalist that two external physical objects exist, for the following reason. It is not shown, but *assumed*, that sense-data are external to us (and are parts of physical objects), and on sensing two sense-data, it is concluded that two external physical objects exist. Is it not begging the question, that first we assume what we are supposed to prove as a result of an argument — namely, that sense-data are external to us and are parts of physical objects — and then on sensing sense-data it is asserted that two external objects exist ?

(4) Moore did not retain this view either for a very long time. In "Status of Sense-Data", 1914, he had held that unsensed sense-data exist. Now, if sense-data could be parts of the surfaces of physical objects, they could also exist unsensed (since physical objects do), but Moore did not hold the

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identity view then. What enabled him (and other philosophers) to assert their unsensed existence was the assumption that sense-data were distinct[12] from sensing, that is, experience of them, therefore they could exist when their experience ceased. But in 1942,[13] as a result of Duccasse's criticism, he accepted the view that sensible qualities, for example, blue, bitter taste, etc., could not exist unsensed, and admitted that his earlier view was wrong. If they could not exist unsensed, then sense-data cannot be identical with physical surfaces, which do exist unsensed; so here again he cannot hold the identity view. Yet we find him admitting that he is holding both of the two incompatible propositions, that sense-data can and that they cannot exist unsensed, and also holding that sense-data can and cannot be identical with physical objects. Here he is completely puzzled. He believes that an image which, like a sense-datum, is directly apprehended cannot exist unimaged, and sense-data directly apprehended cannot exist unsensed, yet he does not see 'where' the contradiction lies. (It is because Moore could not really give up his adherence to common sense.) Still the temptation to hold the other proposition also considerably weakens his view that sense-data can exist unsensed and can be identical with surfaces of physical objects which do exist unsensed.

(5) It was only in 1953 that he realized, as a result of Russell's persistent criticism, the force of the argument from relativity, namely, that how can so many sense-data be identical with the same part of the physical surface ?[14] So he concluded, in a discussion of visual sense-data, that sense-data cannot be identical with the parts of the surfaces of physical objects, and this view is a 'nonsensical' one. (If so, how can we know physical object propositons with certainty to be true ?) He had thought so, because he was impressed by the term 'that' which refers to the sense-data, and is short for a definite description. Now he realized that *'is'* in "That 'is' a part of the

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surface of physical objects", is not '*is*' of identity. But what the relation '*is*' is, no philosopher, according to him, has been able to explain.

The reference to these articles of Moore serves the purpose of showing that sense-data can, in no sense, be regarded as parts of the surfaces of physical objects. Still the puzzling question is that when we judge about the surfaces of physical objects, whatever we judge is on the basis of sense-data. So what is the relation between the two ? Let us consider another answer in the next chapter.

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CHAPTER 11

FACTUAL PHENOMENALISM

INTRODUCTORY

It is clear by now that naive-realism has completely broken down. It cannot be defended against philosophical arguments, though it holds good for the practical life. Thus the common-sense belief in the existence of physical objects — as permanent durable public entities — has to be explained in some other way. On sense-datum theory, there are two questions:

(1) How does common sense come to the *notion* of one particular physical object, such as a table or chair, having one particular shape, size, colour, etc., when basically our sense-experience consists only of innumerable fragmentary sense-data ?

(2) How can it be justified in holding a belief in the permanent and independent *existence* of such objects ?

A philosopher who starts from 'helter-skelter' of sense-data has to answer both these questions and explain the 'common sense thing' in terms of our sense-data. In this chapter we shall take up the first question — How, on sense-datum theory, do we explain, or to use Russell's technical term, 'construct', the notion of the common sense thing ? What is the relation between sense-data and the physical objects ? What are common sense objects in this theory ?

The first possible answer that suggests itself is — Can sense-data not themselves be taken to be what we ordinarily mean by physical objects ? This is the answer that phenomenalism gives. So we shall have to inquire — In what sense can they be

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taken to be physical objects ? Not, as shown by our previous discussion, as parts of the surfaces of physical objects. A single sense-datum cannot be a physical object either. Can a group of sense-data be taken as a physical object ? If so, what sort of sense-data should the group comprise; in what relation should they stand to each other ? Can this group by itself satisfy all the requirements of a physical object ?

Now, our sense-data can be grouped and classified in a number of different ways, according to the different relations they sensibly have to each other. Therefore, one has to discover such relations as would enable us to call a group related by these relations 'physical object' of common sense, such as a book, a tree, a house, etc. In this process, it is obvious that we cannot confine ourselves merely to the awareness of sense-data, but have to bring in memory, recognition, etc. This is not (as might be thought) an objection, because in developing such notions we have already passed beyond the stage of pure sensing. Yet, it must be remembered that we are dealing with purely sensory material.

This 'group view' of physical objects can be studied under the following headings:

(1) Factual phenomenalism — that is, a theory of the world, that physical objects, in some sense, consist of sense-data.
(2) Sensibilism[1] — Physical objects as groups of unsensed sensibilia.
(3) Linguistic phenomenalism — a physical object statement is reducible to sense-datum statements.
(4) Ayer's modified version of phenomenalism.

The first two views are different from the others as they claim to explain the so-called physical world in terms of sense-data, whereas the others attempt to give the relationship of physical object statements to the sense-datum statement.

Now, to the question—How does common sense arrive at the notion of one physical thing ? — the answer, on the first view, can be given in terms of Russell's 'method of logical construction',

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Broad's 'perceptual objects', and Price's 'families' of sense-data. These notions are developed on phenomenalistic lines, that is, with purely sensory material. But the difference between a thoroughgoing phenomenalist and these philosophers is that they do not regard their logical constructions or groups as equivalent to the complete notion of a physical object. Having constructed them on sensory basis, they find that these constructions need supplementation. Hence they infer related unperceived physical events.

The second of the four views holds that physical objects are composed of unsensed entities very much like our sense-data.

Now it is very important to remember that — (a) This is not a psychological question or investigation. This is *not* the way (as suggested by these methods) in which the notion of physical objects is consciously constructed *by common sense* from sense-experience. It is largely held that it cannot be so because this notion is a postulate or a category. These methods merely show how we *could* arrive at the kind of group called a common sense thing from mere fragmentary experiences, and how the building up of a perceptual field in a child's experience is a process of integration and discrimination.[2] So, as far as integration of sense-data into perceptual complexes called 'physical objects' by common sense is concerned, these may be the right type of answers — yet (b) as far as the complete notion of a physical object goes these constructions may not be the whole truth, that is, may not be complete explanation of what a physical object is. Our common sense belief in the physical objects involves a claim to their unperceived existence, and this claim needs some sort of justification. It cannot be justified by manipulating sense-data alone, because however these groups of sense-data may be *like* a physical object, they consist of sense-data only, which are dependent on the percipient and cannot transcend this dependence. As far as logical necessity goes, we may well confine ourselves to sense-data alone. But we are left with

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incomplete notion of a physical object. So, to complete this notion, we might have to fall back upon some form of causal view.

Now, the tendency in recent discussions concerning sense-data and physical objects is to regard this manner of speaking (namely, physical objects are 'logical constructions' out of sense-data) as misleading, that is, it gives a wrong impression that sense-data and physical objects are two distinct entities like tables and chairs, or a new entity is created. So, it is said that we should reduce it to the relationship between statements concerning physical objects and sense-datum statements.[3] But these logical constructions which are taken by common sense as actually perceived objects, are groups of sense-data (as defined earlier), and it is legitimate to ask what sorts of relations hold among sense-data which enable us to construct a physical object-like group, if we are going to deal with the relationship between sense-data and the physical objects at all. No new entity is created. It is an attempt to analyse the notion of a common sense thing in terms of sense-data (we shall see whether wholly or partly).

Now, a thoroughgoing detailed account of the required relations among sense-data would involve difficulties about space-relations, time-relations, motion change, duration, which in turn would involve relations between one observer's sense-data in the same sense-field, relation between his successive sense-fields, relations between contemporary sense-fields of different observers, the relations between normal and abnormal sense-data, and so on. These are such vast and tremendously involved topics that we shall have to confine ourselves to one, namely, spatial relations, to illustrate the construction of groups called physical objects. Yet the construction in principle is the same.

In this chapter I shall show (in outline) the development of the notion of common sense thing on phenomenalistic lines. It is not possible to discuss the construction of a physical object in the works of Russell, Broad, Price and Ewing in any detail. We will take only representative views of the

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method of construction, though keeping in mind that there are differences of details in the individual views. But we will learn that in principle the complex of sense-data called a physical object can be constructed along similar lines. I shall take Russell's and Price's concept of constructions of a physical sense-data as specimen constructions.

RUSSELL'S LOGICAL CONSTRUCTIONS[4]

Russell expounded his method of constructing the notion of a common sense thing (and other entities which we need not discuss here) as early as 1914 in *Mysticism and Logic* and *Our Knowledge of the External World*, and then much later in *Analysis of Mind* (1921) and *Analysis of Matter* (1927). Though the methods change little, his metaphysics undergoes considerable change in his various works.

How does the actual construction proceed? Russell first attempts to construct a momentary common sense thing with reference to our private percepts. (This is the term he uses instead of sense-data.) Each person has his own private perspective, that is, the view of the world from his own peculiar angle. How do we pass from this private perspective to common objects? People, as a matter of fact, perceive similar perspectives, and use the same words to describe them. The differences become irrelevant for practical purposes. When the similarity between the perspectives is great, they are said to be near together in space. (This space is an inference from the correlated private spaces.) Due to this similarity of neighbouring perspectives, many similar objects in these perspectives can be correlated with each other. So a momentary common sense thing is defined as follows: given an object in one perspective, we can establish a system of all those objects which are correlated with the given object. This system would be called a momentary common sense thing. Thus, an aspect of a thing is a member of all those

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aspects which is the thing at the moment. All the aspects of the thing are real, the thing is merely a logical construction.[5]

How are these aspects which form a momentary thing collected to form 'one' thing? He gives three principles:

(1) Similarity, as just discussed.

(2) Continuity: when there is reason to regard two appearances seen at different times as belonging to the same thing, we assume continuous series of unobserved intermediate states during the time when it was not observed. But this is an insufficient criterion, since we can see continuous objects which are not states of one thing.

(3) The third principle is the Causal Laws. This is the most important principle of classifying appearances as things. These are laws which connect events at different times, or at the same time, provided the connection is not logically demonstrable. Physics finds it possible to collect sense-data into series behaving in a certain way in which series not belonging to the same thing would not behave. Such series are not in contradiction with sense-data, but are ideally suited to regard them as aspects of one thing, or one 'body'.

The whole series of the group belonging to one thing is called a 'biography'. Now what about space? In a child's experience, visual space is different from tactual space, and by correlating the two he learns to construct one space of experience which is private to him. There are as many private spaces as there are perspectives. The relation between private space and perspective space is as follows: Perspective space is a system of points of view, an all-embracing space, containing our bodies and our sense-data. It is never known directly but is inferred in the following way. Our private spaces can be ordered by means of similarities. Taking a penny as an example, we can get a whole series of perspectives in which the penny will appear round yet of varying sizes. Similarly, we can have another series of perspectives in which the penny will appear to have an elliptical

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shape. These lines, or series, will 'intersect' at some perspective, or some point in perspective space; this point is said to be the place where the penny is, that is, this perspective corresponds with the place where the penny is. In this way space of physics is constructed and, since the construction goes on unconsciously, the distinction between private and public space is blurred. 'Here' is defined as the place which is occupied by our point of view.

It follows that two places in the perspective space are related with every aspect of the 'thing' (defined as a group of aspects): (1) The place where the thing is, and (2) The place which is the perspective of which the aspect forms a part. On the other hand, every aspect is a member of two different classes of aspect[6]: (a) it is a member of a group, namely, the group consisting of various aspects which are the thing, of which one appears in a given perspective; (b) the perspective of which the aspect of the thing is a member. Thus all the various aspects of a thing can be classified in these two ways.

This forms the basis of Russell's neutral monism, that is, mind and matter are merely two different groups constructed out of the neutral particulars. We are not at present concerned with the difficulties of his metaphysics. Whatever the ultimate nature of these appearances may be, according to him they are collected into groups according to the three criteria given above.

PRICE'S 'FAMILIES' OF SENSE-DATA

The question again is, How does common sense come to the 'notion of a family', (Price's[7] term for a common sense object)? He explains these with reference to the visual sense-data. The visual sense-data belonging to the same thing, though different, yet form a collection. Within this collection a number of sense-data are found to fit perfectly together, as to form a three-dimensional whole, a solid. These are spatially synthesizable or 'constructible' data, and have the characteristics of 'depth' or

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'oneness' and 'sensibly facing' in a direction. In view of these characteristics, he divides the visual field into the stereoscopic and the flat part. The first contains sense-data at a smaller depth than the maximum, and they may face in sensibly different directions. The second contains sense-data at the maximum depth. Perfectly constructible and perfectly stereoscopic collectively from a solid which he calls a 'nuclear solid'.[8] This solid serves to unite both differentiation and distortion series, or in other words, it is from here that all series deviate in different directions, manners and degrees.

Is this solid real? It is said that, however much we may manipulate sense-data, no three-dimensional solid can be conjured up. Price explains this with reference to possible (or obtainable) sense-data. Sense-data of a certain kind would be obtainable if certain conditions are fulfilled. "S is obtainable" means "if I change my point of view, from A, in this manner, S will exist". My point of view should be so changed that I sense progressive series starting with A, and then eventually should sense S. Now, "obtainable by a change of point of view" is equivalent to "obtainable by a spatial synthesis of a definable sort".[9] All syntheta are themselves sense-data, and relations between any two are sense-given relations. Thus a group of actual and obtainable sense-data is the standard solid, that is, if I change my point of view, I shall sense a series of sense-data, which together make up a standard solid, and when at any time I am sensing one member the others are obtainable. I can recall the whole group which is a solid.

Our next question is, How does common sense come to recognize the real shape, colour, size, of a physical object? Price says that the standard figure of the nuclear solid is taken as the figure of the physical object. Then it has a standard colour and shape, that is, one colour and shape, on which different colour and shape series converge.

A hallucinatory sense-datum on this view is completely 'wild'.[10] It is taken to be the member of a family, yet it belongs

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to none. Illusory sense-data are taken to belong to wrong families. Mirror images are 'incomplete families'.

Now, these two accounts of the construction of a group of sense-data, answering to the description of common sense physical object, though different in detail (and the latter one worked out more thoroughly), are yet essentially similar in principle. *In Scientific Thought*, Broad also explains the construction of a group. The difference between Broad's and Price's explanations lies in their approach or starting-point. Broad starts with abnormal or wild sense-data and explains physical objects in terms of their integration; Price, on the other hand, starts with the nuclear sense-data and all the other sense-data belonging to a family are regarded as distortions of these. But the character of the required relation among sense-data being what it is, it is obvious that any other alternative method should proceed on similar lines.

Next, the question is — Are these groups of sense-data equivalent to a physical object or not? It seems that they cannot be so, for reasons we shall study later. Russell, in order to explain physical objects, attempted in *Our Knowledge of the External World*, to build this notion on hard data alone, but later he found it necessary to infer unperceived physical events. In Broad's *Scientific Thought*, we find both strains of thought, but later he admits that he was trying to refurbish the representative theory which he still held. So we shall interpret his view accordingly. Price finds his families of sense-data unsatisfactory and so infers unperceived physical occupants.

PHYSICAL OBJECTS AS GROUPS OF UNSENSED SENSIBILIA[11]

According to Ewing, the sense-data (or 'Sensa') that compose a physical object are in fact never sensed, yet they are actual existents, qualitatively alike, though numerically different from sense-data which we do sense.

Ewing's view in outline is similar to Russell's view of sensibilia in *Mysticism and Logic* (with differences of detail).

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He holds that physical objects consist of entities which are not themselves sensed immediately, yet are of the same kind as sense-data. They are combined differently in the physical objects and conform to different causal laws, and may have different properties. In veridical perception they are qualitatively similar to sensed sense-data[12]. Though physical objects are groups of sensa, we cannot hold the reverse position.

How do we know that the sense-data, composing a physical object, are similar to actual sense-data? The main reason, according to Ewing, for postulating similarity is that, if physical objects do not consist of sense-data, then it is impossible to see how we can establish their existence at all.

Now, the argument assuming similarity between sense-data and whatever composes the physical object is not, as we have already seen, the only argument to establish the existence of physical object. The argument from inverse probability or prediction is stronger for the purpose, and does not require similarity between the components of physical objects and sense-data. The argument from inverse probability holds that almost all the predictions of common sense and science are verified, in terms of sense-data, on the assumption that there are physical objects, in such a way that it would be impossible to attribute them to pure chance. These physical objects need not be like our sense-data, and yet cause them in such a way that all our predictions are true.

Secondly, sense-data are determined partly by physical processes and partly by the percipient. So physical objects would be part causes only. When part conditions, that is, our perception, are removed, that which remains would be different from sense-data. It follows that unperceived entities need not be like sense-data.

So, for these reasons, we conclude that we cannot hold this view of physical objects.

In the next chapter, we shall examine the linguistic version of phenomenalism.

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Chapter 12

LINGUISTIC PHENOMENALISM

Linguistic phenomenalism treats the problem of the perception of the external world as that of the relation between physical object statements and sense-datum statements. This has been an offshoot of the general linguistic approach to all the problems of philosophy. It is an attempt to analyse the physical object statements in terms of sense-datum statements. The problem has been formulated differently as the physical object statements being analysable into or translatable into or reducible to a series of sense-datum statements. There are difficulties about both kinds of phenomenalism, but the linguistic form is more difficult to defend.

How is the actual analysis in linguistic terms carried on?

Let us take a physical object statement, such as 'there is a book in the other room'. This would be analysed in terms of statements regarding human sense-data as "if I were to have such-and-such sense-data, that is, kinaesthetic sense-data (of going into that room), I shall have such-and-such other sense-data, that is, book-like sense-data". Ayer asks, in saying "I am now perceiving a matchbox", what am I saying? Partly I am saying that I am sensing certain sense-data characteristic of the matchbox, and partly something more.[1] What is that something more? A phenomenalist's answer would be that all that I mean is that further sense-data of the appropriate sort, in appropriate conditions, are available. This is what a material object statement comes to. To talk about a physical object is to talk about human sense-data.

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Such an analysis cannot be confined to actual sense-data alone. Physical objects are supposed to persist unobserved, whereas no object can be actually observed all the time. Hence a physical object statement cannot come to a series of statements concerning actual sense-data; so the notion of *possible* or *obtainable* sense-data is introduced. Thus, in its older form, on the phenomenalistic view, a physical object was supposed to consist of actual and possible sense-data. But there were objections to the notion of possible sense-data. If sense-data were actual constituents of the physical objects, and if the physical object itself exists, it cannot be regarded as consisting of mere possible entities. If it was, then, since possible sense-data have no existence, the absurd conclusion would follow that a physical object continually comes into existence the moment we sense certain sense-data and goes out of existence when we cease to sense them. But this is not what we mean by a physical object, hence a shift to the formal mode of speech. It was said that in the analysis of a physical object statement some of the statements referring to sense-data will have to be hypothetical. The analysis of a physical object statement like 'I am perceiving a book' may run as 'I am sensing certain sorts of sense-data, that is, book-like sense-data', but a statement like 'there is a table next door' will have to be translated as 'if I were to have such-and-such sense-data (that is, those of movement), I shall have such-and-such other sense-data (table-like sense-data)'. Thus all the categorical physical object statements have to be analysed in terms of actual and hypothetical sense-datum statements. They, in other words, would mutually entail each other.

Now, we may ask two sets of questions:

1. Is it really, in effect, possible to carry out the translation of physical object statements into sense-datum statements, that is, can we overcome the linguistic difficulties in such a translation?

2. Even if, for the sake of argument, we allow that it is linguistically possible to carry on such a translation, in

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principle at least, are both kinds of statements logically equivalent, that is, can the notion of a physical object be completely explained in phenomenalistic terms?

In order to analyse a physical object statement *fully* in terms of sense-data statements, we must confine ourselves solely to sense-datum language, that is, sensory terms and words. Now, it is not possible to distinguish one set of sense-datum statements describing a physical object X and another set describing another object Y, without using physical object words. If I want to say 'I am perceiving a black book', I shall have to say some such thing, 'I am sensing black, rectangular, hard, extended . . . sense-data', and this might be taken as the description, say, of the top of a rectangular black table. So at some stage, we shall have to bring in physical object words to distinguish various sets or groups of sense-data which are taken as various physical objects, such as 'table-like' or 'book-like' sense-data. Now, 'book' and 'table' are words of ordinary physical object language with all the implications of independent and permanent existence, etc., which are part of the meaning of any physical object word. But this is something which phenomenalism cannot allow.

It might be replied that the use of such words, for the identification of specific physical objects, is made inevitable, due to the poverty of sensory language, and that it is only in such physical object terms that we are capable of thinking about and grasping our sense-experiences. Even if a sense-datum has to be referred to a physical object word for its identification, as for example, 'table-like sense-datum', it does not thereby cease to be a sense-datum and become a physical object of common sense. But this is a possible defence only for those who regard the notion of sense-data as a theory to explain our beliefs in the physical objects (and do not deny the

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independent existence of physical objects known in some other sense); so for them, reference to physical object words constitutes no objection. But linguistic phenomenalism claims that it is not a theory but only an alternative language, and yet the analysis in terms of sense-data language cannot be carried on without reference to physical object words. It means that there is no pure sensory language and so the translation cannot be carried out since every description ends with a physical object word.

Even if we admit that a sense-datum language can exist (with the help of physical object words), an exact translation of physical object statements into sense-datum statements is not possible without loss of meaning, or without any remainder, for the following reasons:

(a) In order to give an exact translation of any physical object statement, the set of sense-datum statements required will have to be infinite, because we can perceive a physical object under an infinite variety of conditions, and from innumerable points of view, and distances, and light conditions, etc. So, the resulting sense-data will be slightly different from each other and we shall have to do what is impossible, that is, state all these conditions for an equivalent analysis of the corresponding physical object statement. One suggestion is that possibly the principle can be shown by mentioning important points of view from which sense-data will be sensed and saying that between these there are gradually changing sense-data corresponding to the gradually shifting points of view. But then a specimen translation should be given to show how it is possible. But actually so far no such translation has been attempted.

(b) Sometimes sense-datum statements may be true, yet the corresponding physical object statement which they were supposed to verify may turn out to be false. Such is the case in hallucination or double vision, etc. We might sense certain sense-data which would verify a physical object statement, yet the statement itself may be false, as for example, it may be

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true that 'I sense two pen-like sense-data', but the statement 'two pens exist' might be false because it may be a case of double vision. So we cannot hold that they mutually entail each other.

(c) On the other hand, the physical object statements may easily be true, yet the corresponding hypothetical sense-data statements may be false. It may be true that 'Tom is sitting in the other room', yet it is possible that, if we go there, no sense-data occur either because it is dark, or because it is logically possible that all of us may suddenly suffer from a collective hallucination or psychic blindness, etc. So, from the fact that I have had no sense-data, we cannot conclude that the original physical object statement is false.

Ayer[3] mentions two examples to show the sort of supposition such an analysis will have to make. It presupposes that (a) the introduction of the observer does not make any difference to the events taking place, and (b) that it is possible to observe under all sorts of conditions. A statement like 'so-and-so murdered his wife' is translated as 'if I were to observe, I would have such-and-such sense-data'; but it is quite possible that if I were to observe, there would be no murder. As to (b), that is, the observations under all sorts of conditions, a statement about the size of the sun would be translated as 'if I were to be at such a distance from the sun . . . '. But if I were, I would be burnt up instantaneously. It is said that the observation should, in principle, be possible, even if not actually possible. But it means that the hypothetical propositions would be false, and since categorical propositions about physical objects are true, the analysis is invalid.

Thus, to establish the truth of a physical object statement, it is not a sufficient condition that certain sense-data are sensed. On the other hand, mere existence of a physical object is not enough for the occurrence of the sense-data. So the conclusion is that the mutual entailment cannot be upheld.

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(d) If so, then it follows that the physical object statements are not conclusively verifiable by sense-data statements, because the possible tests are infinite. As far as the practical certainty goes, a number of familiar favourable cases, that is, correlation of visual and tactual data, agreement with other observers may be a sufficient criterion for establishing the truth of a physical object statement. Yet there is always the irreducible logical possibility that further evidence may falsify it.

Ayer, who held a similar view earlier,[4] rejects it later on[5] and says that if a flowerpot turns into a telephone, then he would be at a loss as to what to say, yet he will take the previous evidence as conclusive. This may be a miracle. Its bearing on phenomenalists' claim, according to him, is that no one single sense-experience proves anything, but memory, beliefs about the *physical world* and past experience taken toghether are conclusive evidence.

But this physical world that Ayer talks about is not the phenomenalists' world, but common sense notion of physical world with the belief in the permanent, independently existing objects, that is, the belief that things persist and do not suddenly change their structure. These are the assumptions which phenomenalism would deny. In the phenomenalists' world, where orderly occurrence of sense-data in groups is merely a contingent fact, there is no reason why sense-data should not suddenly occur, in different or fantastic groups.

(e) A physical object statement has an indefinite reference to various conditions and circumstances. Therefore, the specification of no one particular set of sense-data is precisely entailed by the given physical object statement. What is required for establishing the truth of the physical object statements is the occurrence of any one or the other kind of sense-data which fall within a fairly indefinite range, as for example, sense-data characteristic of a ball establish the existence of a ball, and those characteristic of a clock would not, but the number of

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possible sense-data of the ball fall within indefinite range, and any few chosen might establish the existence of the ball, not any particular few. So we may conclude that no mutual entailment is possible.

The purpose of phenomenalistic analysis, according to Ayer, is to "provide a general elucidation of the meaning of the statement about physical things by showing what is the kind of evidence by which they may be verified".[6]

Though physical object statements are verified by sense-datum statement, usually we do not verify, or illustrate, the meaning of a physical object statement by the lengthy complicated analysis which phenomenalism would require. Ordinarily few observations and agreement with the other observer's sense-data are enough to verify such a statement. Moreover, certain physical object statements are incapable of being verified in terms of sense-data, for example, those pertaining to magnetic attraction, electricity flow, behaviour of certain instruments, etc., and yet these are accepted as true.

Now, if phenomenalism be taken merely as elucidating the kind of evidence by which physical object statements may be verified, it is not what it originally was meant to be. It was taken to be either a theory — that physical objects are families or logical constructions out of sense-data, or it was considered possible that physical object statements can be exactly translated into sense-datum statements. Thus it may be that common sense objects or families of sense-data are related to certain unperceived entities, which cause our perceptions, yet our sense-data may verify statements about their existence, if verification is to be taken as good evidence. A statement like 'this is a book' would be strongly verified if many people perceived the book, yet what that book as a physical object is, in its own nature, may not be fully perceivable. Hence in this version of phenomenalism there is nothing to show that nothing exists besides sense-data.

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Ayer's position is rather unique. His view is not purely linguistic phenomenalism and yet he does not believe in the existence of any unperceived entity. He rejects that form of phenomenalism which claims mutual entailment of the physical object and sense-data statements because the reference to physical objects cannot be eliminated in favour of reference to sense-data, but he holds that to speak of physical objects is not to speak of something different and over and above our sense-data.[7] The world does not contain both sense-data and physical objects as it contains tables and chairs.[8] In the *Foundations of Empirical Knowledge*, he tries to describe those relations among sense-data which enable us to adopt physical object terminology, that is, how the beliefs in the unity, publicity, substantiality of physical objects have arisen. Hirst[9] calls it pragmatic phenomenalism, that is, we could say that physical object words do not denote entities, but are valuable coordinating concepts for organizing sense-data into patterns, and identifying these patterns.

Now, in *Philosophical Essays* and *Problems of Knowledge*, Ayer says that in referring to physical objects, we are elaborating a 'theory' with regard to the evidence of our sense-experience. The statements belonging to the theory transcend their evidence, that is, they are not merely redescriptions of it, yet there is no other supply of wealth than the phenomena over which it ranges. He says that it is because of this that they constitute the justification of this theory.

Ayer admits that the reference to physical objects cannot be eliminated in favour of reference to sense-data.[10] Now, it stands to reason (as we shall later argue) that it is so because something actually exists unperceived, with infinite capacity to cause our different sense-data and which cannot be reduced to sense-data. Otherwise this infinite possibility of sense-experience itself is attributed to chance and becomes inexplicable. Ayer himself says that it does not matter whether we

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talk of physical objects as theoretical constructions or as independently real.[11] Now, if it does not matter to him, and if we really find strong reasons for holding independent existence of some objects, then we could say that the theory deals with actual entities in some sense, and not merely with infinite possibility of reference to sense-data. The theory then may really be richer than the phenomena over which it ranges and our sense-experience may constitute its justification, if justification means very strong grounds for believing in something which is neither contradicted by nor contradicts any facts of experience and is admirably suitable to explain facts. (This will be discussed in the next chapter.)

The next question is — Is it possible to explain the character of our sensory experiences, cohering in groups, and the characteristics which a physical object is supposed to possess, in phenomenalistic terms ? Or, do we have to admit the existence of some unperceived physical entities in a non-phenomenalistic sense ? (The following criticisms will apply to both kinds of phenomenalism, namely, the factual,[12] which we discussed earlier, and the linguistic.)

Common sense has a very deep-rooted belief in the independent existence, persistence and publicity of the physical world. This belief may not be acceptable in its naive form, but we must ask whether it can be justified in some other way. Phenomenalists might say that they are not concerned whether there are physical objects or not, in non-phenomenalistic sense. If there are, all that they mean is this — to say 'there exists a table' is to say 'I shall have such-and-such a sense-data'. Thus *to talk* about every physical object is *to talk* about certain actual and obtainable sense-data. But this is not what common sense and science mean by asserting the actual existence of a physical object, and we shall see that these two are not the same thing.

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(a) The greatest objection to phenomenalism, whether linguistic or factual, is that it lays itself open to the charge that the analysis of physical object proposition is circular. It assumes physical objects, so it cannot refute their knowledge. Every sense-datum statement involves the use of 'I' or the observer. The analysis of every physical object statement would run like this — "If I were to have such-and-such sense-data . . . I shall have . . ." Now, the observer's body, his sense-organs and nerves, etc., are physical objects. They must exist and be intact in order that sense-data should be sensed; otherwise, though physical object statements may be true, hypothetical statements regarding sense-data would be false. Ayer[13] says that we need not make an ostensive reference to the observer; we could say that, if some sense-data occur, some others would occur, and the physical object words should be purely auxiliary. "Given X-like sense-data, Y-like sense-data would follow." Thus the reference to the observer could be excluded. Yet it does not mean that there could be sense-data without the observer. There are further difficulties regarding place and time and direction. (Their analysis in terms of sense-data would be too complex and too involved, to be discussed.) Moreover, the conditions of observation are physical conditions. So, it is not possible to analyse any physical object statements without assuming the existence of *other* physical objects.

(b) These physical objects are regarded as semi-permanent and as persisting even when no sense-data occur. How can a statement regarding transitory sense-data convey all about enduring physical objects ? To say that we shall have such-and-such sense-data, again and again, does not amount to saying that there exists a permanent entity. Ayer explains it with reference to reversible series.[14] But why this continual recurrence of reversible series ? Why should similar sense-data occur again and again, unless there is something which actually causes them ? Moreover, Ayer's reversible series depend on the

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movement of the observer, and the observer's body itself is a semi-permanent physical object. Ordinarily, we do not arrive at the notion of persistence in this way. But the causal effect and unperceived changes and the fact that other people have sense-data while we are not having any, plays a part in our forming the notion of permanence.

(c) Then, physical objects are supposed to be public and common to several observers, sense-data are private to each percipient. How can a group of private sense-data amount to a public object ? According to Ayer, the criterion of judging their publicity is that people agree in their description and spatial location of their sense-data. But for this we have to bring in the observer. To say 'there are two pen-like sense-data', without mentioning the observer, does not entail that they are sensed by two persons, but may refer to a person having double vision, or to his two successive sense-data. Moreover, this agreement of description and location of sense-data is again fantastic unless we hold that there are some public events which affect all the observers alike. Otherwise why do we always have such agreement in ordinary perception, when it never occurs in dreams ? The other explanation would be the direct perception of public objects in normal conditions which, as we saw, is untenable. So the only plausible course seems to be some form of causal view.

Price, who argues the case for phenomenalism thoroughly, concludes that a 'family' cannot be a physical object because causal properties of an object act, even when no family exists. If we leave the butter near the fire, it will melt, whether we perceive it melting or not. If I have a magnet hidden in my pocket, then there are no magnet-like sense-data, yet the needle, if brought near enough, will be deflected, that is, such sense-data would be sensed. This leads Price to say that phenomenalism is false.[15]

Moreover, we can get sense-data appropriate, for example, to the magnet, only in some cases but not in all cases, for

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example, some machines use magnets in their parts. It is unobserved, yet we can only see its effects. Now, these effects say more than merely — 'if I were to see . . . '. They say that some process is actually going on *now*, whether I see it or not. It also follows that if I were not to see, then there would be no magnet which is absurd. There are innumerable such cases where it becomes absurd to maintain phenomenalism.

Now, in the cases where the causes are unobserved, phenomenalism has to suppose possible sense-data as the causes of the actually observed events. How can a possible sense-datum cause anything actual? The concept of a physical object and scientific knowledge require us to recognize causes and effects actually occurring in nature independent of our perception. It is on this point that Stout very strongly criticizes phenomenalism, namely, that it commits the absurdity of making actual occurrences dependent on mere possibilities.[16] We must have actual causes of actual events.

The causation of sense-data themselves, on this view, becomes a difficulty. Their occurrence is due to a complex causal process which involves the stimulus, intervening media, sense-organs, nerves, impulses and the brain. All these objects are mainly unobserved, or if seen at all are seen, in a special sense by a physiologist under special circumstances. So the actual effects, that is, the sense-experience, on phenomenalistic view are caused, not by possible sense-data, but only by those which are obtainable by the physiologist and not by us. Are we going to maintain that our sense-data depend on possible sense-data of the physiologist? So, to avoid all these difficulties, there is no way out but to assume something which actually exists, whether our sense-data exist or not, and is somehow related to our sense-data.

We must also note that the reduction of the categorical statements to the hypothetical ones is not possible.[17] Categorical statements assert and entail existence in a way that hypothetical

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ones do not. To say that there is a table, or the clock is fast, is to assert their actual existence at this moment. So any analysis which says nothing as to their existence would be inadequate. Hypothetical statements do not say anything either way, that is, whether the physical object referred to exists or not. In particular, they say nothing about what is the case now. By saying 'if I go . . . ', I am not saying anything as to what is the state of the table which is claimed to exist now.

Ayer's[18] answer is that such hypothetical sense-datum statements are used to assert the existence of physical objects. But the difference between categorical and hypothetical statements is this — the former ones do, and can be used to point to things and events. But the characteristic of hypothetical statements about sense-data is that they are not, cannot be, and are not meant to be so used. If they are used for such a purpose it is to put them to a distorted function. They can only succeed if we make inferences, for example, 'if I go into the room, I shall get chair-like sense-data . . .' Why? Possibly because there is a chair, yet this is not part of the meaning of hypothetical statements. Nor does a categorical statement say anything about possible sense-data.

The difference between the two kinds of statements can be seen in the case of unfulfilled conditionals. To say that in prehistoric times, there was an animal X, comes to saying 'if there was an observer, he would have got X animal-like sense-data'. But actually there was no observer. So the categorical statement about the existence is replaced by the one as to what might have been, but did not happen.

Lastly, the question is — On what do the possibilities depend? Do they or do they not depend on actual conditions? If they do, then physical object statements are the most important statements of these conditions. If they do not, then it follows that nothing actual exists if humanity is in a dreamless sleep, which is incredible.

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The outcome of this discussion is that physical objects cannot be reduced to sense-data and the statements regarding the two are not logically equivalent. So I conclude that phenomenalism — whether regarded as a theory of the world, or an attempt at the linguistic analysis of the physical object statements — is unacceptable. But the rejection of phenomenalism does not amount to a rejection of the sense-datum theory, and our question is, What then is the relation between sense-data and physical objects? Now, without using the objectionable term 'physical object', we may anticipate our conclusion which shall be argued in the next chapter. These private, fragmentary, short-lived sense-data, cohering in families:

(1) *are in fact evidence for* the existence of something on which they are in part dependent for their occurrence.

(2) What I call sense-data cohering in families, *are taken to be, by common sense* under the name of 'physical object', as identical with the independently existing objects. Hence such physical objects are considered by it as directly perceptible. Phenomenalism argues that they are directly perceptible but not independently existing. Sense-datum theory, on this interpretation argues that something is directly perceived, something else independently exists, yet the independent existence and direct perception are mutually exclusive. There is no logical impossibility why we should not see the external physical reality, but the structure of our perceptual apparatus is such (and certain other arguments also show) that we only perceive its effects.

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Chapter 13

CAUSAL VIEW

The last chapter saw that the attempts to explain physical objects in phenomenalistic terms alone, fail, as it is neither linguistically possible to translate physical object statements fully into pure sensory language, nor does it explain all the characteristics which a physical object is supposed to possess. Thus we find ourselves forced to go beyond sense-data and seek for an explanation elsewhere.

First, it must be admitted that it is not *logically* necessary to go beyond the groups of our sense-data to any other physical existent. The view that the universe consists of our sense-data (and memories) alone cannot be logically refuted. But this admission must be distinguished from an erroneous view that sense-datum theory inevitably leads to solipsism, since all we directly observe are our sense-data. We cannot know that anything else exists. In order to prove solipsism, one must show that logically there could not be any entities — external to my sense-data. The fact that logically our experience need not be accounted for with reference to the external world does not logically entail that it would be a logical fallacy to account for it with reference to the external objects. All that can legitimately be said is that it is logically possible that our sense-data are the sum total that exists, and it is logically possible that there are some other entities causally related to them. But the choice between these two alternatives should then be guided by considerations *other* than logic. Though logically possible, empirically and practically solipsism

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is a 'barren' position, and phenomenalism, as we have seen, is very difficult to maintain in the face of innumerable difficulties. So, philosophers have found it 'practically' necessary to go beyond our private sense-data and postulate some unperceived physical entities.

How can we go beyond our sense-data to physical entities? This question is very ambiguous and unless very carefully interpreted it can give rise to misunderstanding and criticism. We must be clear as to what exactly it is that, on sense-data theory, we want to secure, that is, do we want to establish (a) the concept of the physical object, or (b) the existence of the physical object, or (c) the detailed knowledge about the physical object?

(a) What is the concept of a physical object? There is a general agreement that by the concept of a physical object we mean something which is capable of existing unperceived, which is common to and neutral among many observers and is semi-permanent, and possesses certain spatial properties. (This has been discussed earlier.) Now sense-datum theory starts with such a 'concept', it is rooted in our thought and language. So, our question does not mean 'how do we get the concept of physical objects?' That must be accepted as established for our conscious experience. The second question which concerns the existence of a physical object, means — whether there exist, in simple categorical sense of existence, some actual entities answering to the concept of the physical object with such-and-such characteristics. Now we cannot know their existence by direct perception at all, since all we directly perceive are our sense-data. Hence the question 'How do we go beyond our sense-data to the physical objects?' should be taken to mean — How do we justifiably hold the existence of such entities whose notion we already possess? If we can produce satisfactory evidence, we have answered the question 'How do we go beyond our sense-data to the physical objects?'

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One characteristic answer given is in terms of causal theory of perception. What does causal theory try to show? Let us say tentatively that it aims at establishing that there are some unperceived physical causes of our sense-data. For this kind of causality we shall use Price's term 'vertical causality'[1]. Now, we cannot accept this statement at its face value, as some philosophers reject it altogether, while others object to the way it is stated or to the interpretation of its aims. We shall examine it and see whether, if purged from ambiguities and confusions, it can yield some important truths and can be reformulated.

This theory has been much criticized by Price in *Perception*. He interprets it thus: "expressing the relation between sense-data and physical objects, in general terms as "sense-data belong to physical objects"; on causal theory it means "sense-data are caused by the physical objects". Thus to say that M (material thing) is present to my senses is the same as saying that M causes a sense-datum with which I am acquainted, and perceptual consciousness is fundamentally an inference from effect to cause.

Now, by 'material things' Price means ordinary objects of commonsense perception, such as tables and chairs, etc. If causal theory uses the term material or (physical) object in this sense, that is, for the ordinary common sense objects, then it is obviously wrong to say that they are inferred as causes of our sense-data, because we do not actually infer them. When we talk of seeing a book, we do not ordinarily mean that there is a sense-datum with which we are directly acquainted and which is caused by this book. We just take what we see for granted to be a physical object; so, at this stage inferences play no part. If this is what causal theory claims, then there is something artificial about it. Can it mean that, in infancy, we have inferred physical objects, and now the inferences involved have become unconscious? But a child does not argue thus: "this

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sense-datum is caused by this physical object, or by certain unperceived physical events". As Price says, it is too much of a burden on the infant mind to expect it to argue in this fashion.

It follows then that the theory cannot be taken to mean that the physical objects of common sense are, in fact, consciously inferred from sense-data as causes of sense-data. If not, then we may ask — How do we become conscious of ordinary objects of common sense perception as against sensing sense-data, and in what sense can physical objects be regarded as causes of sense-data? At common sense level, according to Price, we become conscious of what we call physical objects by perceptual consciousness. So we should inquire into the nature of perceptual consciousness. It is a relevant digression from our main discussion of the causal theory, as it is important to ascertain how far does this process go, and whether causal inferences are in any sense required or not in establishing the existence of physical objects.

Price's notion of perceptual consciousness consists of three stages — perceptual acceptance, perceptual confirmation and perceptual assurances. Perceptual acceptance, which arises immediately as a sense-datum is sensed, consists in sensing a sense-datum and immediately taking it for granted to belong to a physical object[2], whether or not it in fact so belongs. It is the very nature of a sense-datum that when it is sensed it refers to something beyond, that is, that this is a part of a spatially larger and temporally longer whole.

Starting from the single act of perceptual acceptance, we arrive at the settled conviction of the existence of physical objects, as: what was taken for granted in the original act is progressively confirmed in a series of further perceptual acts, which are not occurring in isolation, but in relation to one another; so they are superior to mere acceptance. They specify the unspecified object and it is in this specification that the

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confirmation of preceding acts consists. If it is confirmed, then the perceptual acceptance is replaced by a settled conviction, namely, that this presented surface has a back and sides which spatially fit together to make a three-dimensional solid. Such a conviction is perceptual assurance.

Are we entitled to the assurance we reach this way? Price says that the further specification process will count as confirmation of what was initially taken for granted if "there were some independent reasons for thinking that each of the specifying acts is in itself likely to be correct", that is, if it is likely that the material thing presented to the mind in each case does actually exist and has the kind of surface it ostensibly has. If each act has some independent truth, so does the first, and so all mutually confirm each other. This is called 'Principle of Confirmability'. Perceptual consciousness is not knowledge, but a form of rational belief which contains knowledge.

Thus, accepting this account — as far as it goes — we shall inquire, how far it goes? What are the assumptions it makes? Is it justified in making these assumptions? Whether some inferences are needed to justify it?

Price says that we take it for granted that this visual or tactual sense-datum is *prima facie* evidence for the existence of this physical object, whose surface it specifies. Now, this position assumes that we already know of a physical object to which this sense-datum belongs. The same is the assumption that not only the initial act of acceptance, but the entire process of perceptual consciousness makes. So if it assumes the existence of a physical object, then we may ask — What kind of assurance regarding the physical objects does it give?

Strictly speaking, from Price's process of perceptual assurance, all we can learn is that, at the moment, when we sense a sense-datum and take it to belong to a physical object, that *a* particular physical object probably exists, and after further

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specification series, that *it* almost certainly exists. How can this process of perceptual consciousness assure us that in some sense (a) this physical object, whose existence is thus assured, will exist when I do not sense any sense-data, and that (b) physical objects in general exist, and (c) there may be physical objects of which no one has ever had any experience ? This process has to assume that there are physical objects in general, that they exist unsensed, and are in general related to sense-data. Only if we *assume* it, then on the evidence of *this* sense-datum, we can accept *this* physical object, and later, by perpectual confirmation, we are sure that this physical object exists, and will exist unsensed.

Now, the question is — Is there any justification, any independent ground, for accepting these assumptions ? Price says that these acts will mutually confirm each other if there is an independent ground for thinking that each act is likely to be correct. What is that independent ground ?

This question cannot be answered at perceptual level because perceptual consciousness is based on such acceptances; so it cannot justify itself. It is on causal theory of perception that we can justify all these notions by an argument in the following manner. On sensory evidence, we can actually infer that there are some unperceived physical events which are part causes of our sense-data, and actually possess all these characteristics which common sense assigns to the families of sense-data. These unperceived physical events, in virtue of being causally related to sense-data, justify common sense in taking for granted that this sense-datum belongs to a physical object in the following way. Common sense takes a group (that is, a family) of sense-data *as* if it was a physical object, and on sensing a sense-datum takes it to belong to this group while also believing that this group exists independently of being perceived. But this group does not exist independently of perception. What exists thus, are the unperceived events which cause our

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sense-data to occur in a manner in which they could be taken to be members of a group called physical objects by common sense.

Perceptual consciousness is at common sense level, and Price is right in so far as he says that it does not *include* inferences; but that it is so, because it *assumes* all that, on sense-datum theory, stands in need of justification by causal inferences. It may be objected that why should we argue to the existence of a physical world when our job is to analyse our perceptual consciousness. But on sense-datum theory, or any theory which starts from the fragmentariness and privacy of our experience, and rejects naive-realism, the question of the justification of the common sense belief in the existence of the independent, permanent, public objects becomes, important. It can be answered in terms of 'vertical' causality, else, in its naive form, it is possible to reject it altogether.

Price does not deny vertical causality, he does admit "unperceived physical occupants" (that is, unperceived physical entities, occupying space). All he denies is that the inferences are necessary to give us the assurance regarding the existence of physical objects. The difference between his view and causal theory is that the latter talks in terms of stimulus response and coming into existence of a single sense-datum. What, according to Price, is needed is a family changing its mode of prolongation on contact with another family (for example, when a stone is thrown towards a wall it presents a series of sense-data and then there is an abrupt change as it strikes against the wall and falls down). From this, Price, concludes that a physical occupant exists there. (We shall examine this statement presently.) But the objection here can be that a family changing its mode of prolongation can be stated in purely phenomenalistic terms and will not tell us of a physical occupant unless we *already know* that there are physical occupants. Even if, as a matter of fact, we do think that a physical

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occupant exists, where a family is located, we must first be justified in our assumption of the existence of physical occupants in general.

So, as long as we are confined within our perceptual experience, it is true that vertical causality plays no part[4]. We take our sense-data to be physical objects as we know nothing about the physical causal processes involved in perception. Yet in another sense (that is, from the external point of view) the notion of vertical causality becomes the basic. When we ask for the explanation of the occurrences of sense-data in a manner that justifies common sense in taking them for granted to be the physical objects, the answer seems to be that they are related to independent and permanent causes. Thus, if sense-data in general are related to physical causes in general, then the more basic question could be — How is a single sense-datum related to its physical cause? The answer would be on some such lines. When we say 'we see the sun', science holds that there is a physical process, starting from the physical sun, traversing the space between the sun and the eye, changing its character again on meeting the optic nerve and brain, and finally producing the event which is our sense-datum which we call 'seeing the sun'. For common sense, when two people see the sun, their sense-data are identical. For causal theory, they are not numerically identical but only similar, related by a 'common causal origin.'[5]

So we can conclude that from one side of the argument it is true that if there were no groups of sense-data, exhibiting family-like structures, there would be no evidence for any physical existents. But from the other side of the argument it remains true that, if there were no physical events and physical bodies, there would have been no sense-data. The relations between physical object and sense-data, in the order of knowledge and in the order of existence, are reverse.

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Now, we can see the cash value of the much criticized assertion: "physical objects are causes of sense-data". It should be interpreted as: some unperceived events are causally related to our sense-data, and are called 'physical' because, strictly speaking, the defining characteristics of a physical object, namely, neutrality, permanence, independent existence, etc., belong to them only. They do not belong to a single sense-datum, but do so to a family of sense-data only in derivative or "Pickwickian" sense. Common sense illegitimately identifies the sense-data and physical events, whereas the relation is not of identity but causal, though in virtue of this relation common sense can, no doubt, be justified. So we should like to say that the families of sense-data, though taken *as* physical objects, are really an *indication* of the existence of unperceived physical events, and leave the matter there.

When it is said that "unperceived physical events are causes of sense-data", even then this statement is misleading because physical events are not the only cause of sense-data. Sometimes, for example, in hallucinations and dreams, sense-data are produced, yet no physical events are found to account for them. So, though such considerations point to the logical possibility that all sense-data may be produced without physical objects, yet there are arguments to show that at least the majority of sense-data are determined by physical causes. So physical events are only part causes.

This statement needs to be further qualified. Sense-data depend on a number of factors, such as the light conditions, sense-organs, nerves, brain, etc. All these factors are physical. The only factor which presumably is not is the mind, unless one believes in the thesis of physicilism. So the meaning of saying "physical objects are causes of sense-data" is that, though sense-data are determined by a long chain of physical processes and the mind, one of the causes is what Price calls 'differential conditions',[6] and Broad calls 'originative conditions',[7] while

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all the others are called 'standing conditions'. When our physiological apparatus is in order, then both these conditions jointly produce sense-data. Thus physical events can only be accepted as 'one' of the causes or conditions of sense-data.

What does differential condition mean? We sense different kinds of sense-data at different times. Now, we have fairly accurate methods of ascertaining that these differences are not always dependent on our will, in the sense that in a given situation we cannot choose which particular class of sense-data we will sense. If we are in a room, we shall only sense 'some' sense-data, characteristic of the room, and not of the garden. These differences of sense-data which occur independently of our will are to be treated as differences due to independently existing physical entities which are their differential conditions.

Now, I am in a position to reformulate the objectionable statement of the causal theory, namely, the physical objects are causes of sense-data, and give this statement.

Given the characteristics and behaviour of sense-data, there is evidence that they are products of a number of joint cause-factors, that one of the cause-factors is common to all sense-data of a certain sort (that is, of sensation proper) and is neutral between them; in short, it exhibits all those characteristics in the behaviour of sense-data which common sense assigns to physical objects. In view of such evidence, it is reasonable to infer that there are unperceived physical events which cause our sense-data.

Before discussing the evidence which enables us to justifiably infer such physical causes, we must meet one objection,[8] namely, that the causal theory takes the concept of causality beyond its proper limits. It is impossible by a process of valid inferences that from anything observed, something unobserved should be inferred. It is said that the inductive inferences of the type — A is the cause of B — are only justified if I have

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seen both A and B together in the past related as cause and effect, then in an instance, if I see a B only, I infer that there must have been an A to cause it. But this sort of inference that causal theory draws to totally unobservable causes is not valid. Now, this objection cannot mean that by inductive inferences we cannot infer the concept of physical objects, because we admit that we start with this concept as established for us in our experience.

They cannot be inferred in the sense in which Ayer points, nor are they inferred by mathematical inferences. Hence Broad admits that we shall not attempt to 'prove' the existence of an external world.[9] That is why whatever we say as to the intrinsic nature of the physical world cannot be certain. But this belief in something independently existing is accepted as almost certainly true on very strong evidence available within our sense-experience. The sensory evidence also shows that it has the characteristics which it is supposed to have. Now, if a hypothesis accounts for all the facts, and enables us to predict future phenomena, is consistent and coherent, it becomes almost certain as far as logic is concerned and absolutely certain for practical life. Belief in unperceived physical causes is such that it satisfies all these requirements and avoids the difficulties of naive-realism, phenomenalism and solipsism and so is accepted on sensory evidence. Then it is a matter of choice whether we say that, in this sense, they are 'inferred' or not. Moreover, it is now no longer true to say that we know nothing about the unobservable physical events. Science is exploring and giving us a great deal of knowledge about the physical world.

Having given the statement of the causal theory, the question is — What is the evidence for these external causes?

How can we even get the idea or indication that there could be something besides our sense-data or that they are partly dependent on something else? We notice that certain variations in a group of sense-data seem to depend on us, that is,

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our will. We can get different sense-data by moving around an object, or from one place to another. Sometimes, conditions of our sense-organs, as for example, short-sightedness, cold in the nose, dizziness, etc., can all make certain differences to the sense-data. Yet in a given situation what particular class of sense-data I am going to sense and in what particular order they will occur falls within a fairly definite range (though the order is reversible), and this is independent of my will. If I am in my room, I will sense bed-like, book-like, table-like sense-data, etc., but not garden-like sense-data unless I look out of the window or go out.

Similar groups or families of sense-data occur again and again throughout our lives with uniform pattern, whether we will them or not. So, we can conclude that there must be something which causes our sense-data to occur in this manner. Sensation is a process in which we are passively affected and that means that something other than me is affecting me. So the sensations themselves convey impression of the existence of some other activity to me. If so, then solipsism is ruled out: sensations are a passivity towards an activity, which exerts some kind of force on us.

Russell lays great emphasis on the similarity between our and other person's percepts, which he thinks come first in the logical order, when we attempt to establish the existence of something which we do not perceive. Briefly, his argument is as follows.[10] We see other people behaving in the same manner as we behave in response to a stimulus and from something perceived, namely, other person's behaviour, we infer something unperceived, namely, their sense-data. This argument is not conclusive. There may be a wax-work with a talking machine inside it and we may be mistaken sometimes, but it is very unlikely that we are mistaken always. If we are right in some cases, it allows us to infer a proposition of great philosophic importance, namely, that there are existents which I do not

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perceive. Furthermore, the records of camera and dictaphone show a very detailed agreement between the impression they receive and our sense-data. On this evidence, it is an irresistible conclusion that there is something which is common to sense-data of all the observers and affect all the observers and the instruments alike at the same time and produce similar results. This similarity tells us that the independently existing causes are common to the sense-data of all the observers.

The argument from horizontal causality, that is, one thing causally affecting another, also enables us argue the existence of some unperceived physical causes. We have evidence that sense-data change in a manner which would be taken as evidence for physical causation occurring in nature. If we leave wax near the fire, after some time it gets melted, whether we see it melting or not. Similarly, a magnet will attract iron pins whether it is being observed or is hidden under a handkerchief. It follows that some processes go on in nature whether we perceive anything or not.

Next, we also note that the same physical processes which bring about changes in the object affect us also, as for example, in the vicinity of fire, wax gets melted, and also that we feel the heat. So we come to the conclusion that the same physical process which causes our sense-data also causes changes in the physical world, and infer that these physical causes are permanent and durable, that is, the very same physical cause which caused our sense-data, persists and acts, indifferently to our actual perception.

Granted that there is evidence within our sense-data that there is something independent of and common to our perceptions with such characteristics, are we justified in accepting its actual existence? We can here bring in the argument from prediction, or inverse probability. We make, both in daily life and science, innumerable predictions which are based on a belief in the actual existence and persistence of physical

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objects. Almost all these predictions are verified in our sense-experience. Starting from such common predictions as, I shall find my book on the table where I left it this morning (unless someone has removed it), we go on to such complicated scientific predictions as eclipse of the sun at such-and-such a time. Their verification consists in actually observing both, the book and the sun in eclipse. It might be objected that the predictions are based on sense-data and not on independently existing physical objects. But this in itself is a strong argument in favour of accepting the existence of physical objects. Otherwise it will be an extraordinary and fantastic coincidence if all these predictions are true without there being physical objects. When the predictions are not fulfilled, it could always be explained as a mistake regarding the character of a particular physical object and does not prove that there are no physical objects in general.

If, on the basis of all these arguments, we conclude that phenomenalism is false, and sense-data have external causes, it might be said that all we are really entitled to hold is that our sense-data are caused by 'something' or the other. How can we assert that they are caused by physical causes which science discovers? Here, as far as the arguments go, Berkeley's God, Leibniz's monads, Descartes' Demon, or any other theory, might equally do.

If we are presented with a number of alternative hypotheses, all claiming to explain the observed phenomena, we must choose the one which is the best explanation of these phenomena. By the best explanation we mean that which has some rational justification, which enables us to systematize all the facts, which enables us to make predictions, to carry on experiments, etc. Today, so far, the most successful hypothesis in all senses of the word has been the scientific explanation. We have seen how it avoids naive-realistic views regarding our perception, yet retains the basic concept of physical objects, that is, the defining

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characteristics of independent existence, neutrality, permanence, etc. All the predictions, in this view, even the detailed ones, are verified in terms of our sense-experience in a manner that no view involving a God or a Demon could predict. It gives the most systematic, coherent account of our sense-data. There is neither any logical contradiction in entertaining it, nor does it contradict any known facts, nor lead to any false consequences. It is admirably suited for practical life and has contributed enormously towards human progress. All these facts constitute the highest justification for accepting its truth, more than any other hypothesis could demand.

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Chapter 14

UNPERCEIVED PHYSICAL EVENTS AND SENSE-DATA

In discussing the relation between the unperceived physical events and sense-data, it must be made clear that the discussion is no longer confined to the sensory level. It deals with hypothetical scientific entities postulated to give an explanation of our perception of the external world. Therefore, whether a given view is correct or not, cannot be decided psychologically, or only by an inspection of our sense-data, but on other grounds as we have discussed in the previous chapter. Secondly, it is not a discussion at common sense level either. Common sense neither realizes the fragmentary and private nature of our sense-experience, nor the gap problem, nor the necessity to fill this gap. So, objections like 'this is not what a common man believes' are irrelevant. This is not a descriptive account of common man's beliefs, but the scientific explanation as to how and why common man believes what he believes.[1] This answers the objection that causal theory is no theory of perception, as Ayer, in *Problems of Knowledge*, and Price, in *Perception*, assert. 'Perception of the external world' can be dealt with from several points of view — philosophical, physiological and physical, for instance, and all the explanations can throw light on the phenomenon of perception or, 'theories' of perception.

What is the relation between our sense-data and the unperceived physical events? This relation has been conceived differently by different philosophers.

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Can the relation be 'spatial coincidence'? In order to explain the causal characteristics and impenetrability exhibited by the region occupied by a family of sense-data (or visuo-tactual solids), Price brings in the notion of the physical occupant[2] (or unperceived physical objects). What is the relation between the family of sense-data and the physical occupant, for example, magnetic attractiveness, which is the causal characteristic of a physical object? There is, according to him, a spatial relation, that is, the magnetic attractiveness is exhibited all round the place where the family is perceived. Because they are 'coincident', they form a complex of a sort, and sense-data are ingredients in it.

But this is not a necessary connection between the two, since families could exist without physical occupants and possibly there are regions which are physically occupied, yet no family actualizes there.

Now, if the relation of 'coincidence' is spatial, as suggested by Price, it follows that the physical occupants must be in some kind of space, most likely in the physical space. Now, physical space is defined as space of, or relation between, nuclear standard solid. The nuclear standard solid is a three-dimensional whole of actual and possible sense-data, constructed on phenomenalistic lines. We do not immediately sense the whole of it in one sense-field; it is the result of spatial synthesis of a special sort, namely, progressive adjunction, yet we must note that it is known at sensory or rather perceptual level. The relations between nuclear solids also fall within our perceptual realm (though not within one sense-field). Thus the space of nuclear solids (that is, their relation) would in some sense be perceptible; and this space is called physical space by him. If the physical occupant is located in this space, it follows that, though the physical occupants are imperceptible, yet their space is perceptible. If it is not located in this space but in some other space, then the relation between the family of sense-data

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and the physical occupant cannot be 'coincidence'. In order that the two things are spatially 'coincident', they should be in the same space. It seems that, according to Price, the perceptual space is identical with the physical space (that is, physical relations are perceptible), and he is locating, in different senses,[3] both sensory constructs and unperceived physical occupant in this 'one' space; in fact, in the same region of the physical space.

Broad also holds a similar view of the conception of this relation between a group of sense-data which he calls 'perceptual object'[4] and the unperceived physical events, that is, his 'scientific objects'. These scientific objects are literal occupants of the regions marked by the perceptual objects.

Can we then hold that sense-data and their unperceived physical causes are located in the same space, and is the relation between them 'spatial coincidence'? There is no logical contradiction in holding this view, in the sense that it is not a self-contradictory notion. But it is very doubtful whether it will hold; the reasons are as follows:

(a) Our sense-data of the so-called *same* physical object are experienced at different places in our sense-fields. They can appear at varying distances from each other and at different visual depths from the observer's perceptual body (that is, field of his somatic sense-data). This is mainly possible by the use of such devices as telescopes, binoculars, glasses squinting, etc. Sometimes they can appear to be two, by pressing one eyeball, and sometimes, without any external aid, as for example, due to dizziness, fatigue, etc. Now, which of these places is to be taken as the region where the unperceived physical events are, and why?

(b) Arguments from finite velocity of light and sound show that they cannot be located in the same regions which are occupied by the sense-data. A physical object may present its appearance at one point in space, yet may have moved elsewhere.

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It is of great importance in connection with distant bodies, and though negligible as far as objects at very short distances are concerned, yet the principle is the same.

(c) The reason that Price gives for holding that physical occupants are located in the same region is that the region is found impenetrable and causal characteristics are manifested there. Now, simply because a region is found so, it does not necessarily follow that it is occupied by unperceived physical events. In dreams, illusions, hallucinations and under the effects of drugs and hypnotism, we can actually feel impenetrability and see causal characteristics manifested in a region, yet those regions are not physically occupied.

(d) Mirror images are the most obvious examples of a region being sensibly occupied by a family, but not physically occupied by the same physical events which are usually associated with the family.

(e) There is evidence from medical sciences and physiological investigations that, even in the case of the human body, we cannot hold that its physical and perceptual location is in the same space. What is called 'phantom limb' phenomenon is common, that is, we do not experience physiological body at all, but have latent phantom body, which manifests itself in cases of lesion. For example, sometimes it happens that though the lower part of the leg is cut away we feel pain in that place where that part of the leg was, because we think it is still there, but it is no longer a part of our body but is pickled in the specimen jar of the medical laboratory. The relation between them is causal, not of ontological identity.

The next view to be examined is, what Broad calls, the theory of Multiple Inherence,[5] which, according to him, assumes one absolute space for the location of all sense-data. It is suggested that our sense-data (which according to this theory are not fragmentary private particulars) can be regarded as

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a particular region of the physical space which is pervaded by a certain determinate shade of colour at a certain time, provided we recognize the peculiarity of the relation of pervasion. This relation is essentially triadic, involving three terms: (a) the colour which pervades (that is, the datum of sense), (b) the region which is the region of projection, that is, the place from which a region is pervaded, where the percipient is, and (c) the pervaded region. Thus, sensibly, red cannot simply inhere in a place, but only "inhere-in-a-place-from-a-place". But physically a colour pervades a region in a dyadic way. This dyadic manner of pervasion is not a fundamental unanalysable relation, but "region R is physically red" can be analysed "from every place occupied by a normal brain, and near enough to region R, some shade of red sensibly inheres in the region R".

This theory assumes one Absolute Space, as a kind of amtrix or substance, because otherwise there will be nothing to be pervaded. Its regions are ready to be pervaded by a given colour if a human brain connected with sense-organs happens to be in its neighbourhood. This is Broad's objection to the theory, and for this reason, he prefers what he calls Sensum Theory, which does not assume one space matrix. Sensum theory, according to him, holds that sense-data are not in the physical space in the sense in which physical objects are supposed to be.[6]

As to the relation between sense-data and unperceived physical events, there are three alternatives:

(a) That sense-data and physical occupants are spatially coincident, in the peculiar sense discussed above, and that both are located in the same region of the physical space.

(b) That sense-data and unperceived physical events are not located in the same region of physical space but are in different regions of the same physical space.

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(c) That sense-data and unperceived physical events are in two different spaces altogether, of which one is sensory and the other is imperceptible physical space.

We have seen that (a) cannot be accepted. Can we hold (b), that is, what the theory of multiple inherence asserts, namely, that unperceived physical events are located in regions of the same space, but other than those which are sensibly occupied by sense-data? This position amounts to saying that sensory and physical spaces are identical and sense-data are somewhere in the physical space.

This question cannot be answered simply by 'yes' or 'no'. All that could be said is this: what is called perceptual space, is itself constructed[7] out of our different visual and tactual sense-fields. Visual sense-field is nothing but spatial relations between our visual sense-data, and tactual field is the spatial relation between tactual sense-data. One perceptual space is the correlation of these fields. It is arguable that: (a) these relations no longer exist when the terms on which these depend (that is, our sense-data) have ceased to exist. Now, as to what the physical space (that is, spatial relation between physical events) is, which exists after perceptual space has ceased to exist, we do not exactly know. But it is reasonable to hold that since the unperceived physical events are independent of our perception, their relations must be independent too, and would exist when the relations between our sense-data no longer hold. (b) Physical space is, therefore, an inference from our sense-fields and is entitled to have a great deal of postulated similarity, but not identity. (c) The perceptual spatial relations are subject to changes with the changes in the percipient, but these changes make no difference to the spatial relations between physical events. (d) Moreover, there cannot be direct spatial relations between sense-fields of different observers which would have been possible if they were in one space.

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From these considerations I conclude that sensory and physical spaces are not identical and sense-data are not anywhere in the physical space.

If so, what is the relation between sense-data and the unperceived physical events located in the physical space? This relation is *causal* and can be explained in the following manner. Suppose, taking visual sense-data as an example, we see a flash on a dark night. According to science, there is a centre of disturbance somewhere in a region of the physical space. Certain electromagnetic waves travel from this region in all directions. When they encounter matter, their energies undergo some transformations. When that piece of matter happens to be a human eye, connected with the nerves, the brain and the mind, they obey different laws. When this process reaches the brain, it results in an event or a particular which we call 'seeing the flash'.[8] The same sort of process takes place for data of other senses. This 'particular' is our sense-datum. It is the function of four factors — the unperceived physical events, the intervening region of space, the physiological apparatus and the mind. Its peculiar character is determined by all these four conditions, of which the last two are independently necessary and sufficient, the first two are dependently necessary. Hence, it cannot be called plainly mental or physical or cerebral. It is a unique phenomenon in the physical universe, that is, the universe of unperceived physical events; so is the perception of what common sense calls physical object, which is only a 'family' constructed out of such unique particulars.

The conclusion that Russell seems to reach, from the causal continuity of the perceptual and physical process, is that sense-data and all their perceived relations which form perceptual space are in the physical brain or are a part of the physical brain.[9] It is so because the causal process ends in the physical brain and sense-data as subject-matter of physics are not very

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different from the events that physics deals with. Thus they acquire a location in the physical world.

There have been some objections to this view, for example, we do not see sense-data, that is, patches of colours, etc., 'in the brain' but outside the brain. But this could be answered by pointing out Russell's distinction between sensory and physical space, and between perceptual and physical bodies. All sense-data, including those of the brain itself, are outside our perceptual bodies, but not outside our physical bodies. Our percepts of our own bodies and those of other physical objects are located at the perceptual distances from one another in the perceptual space, but our perceptual bodies and all other sense-data are in the physical brain. Owing to this distinction between perceptual and physical bodies, Russell concludes that the causal location of all sense-data is in the brain, somewhere between the afferent and efferent nerves.[10] Sense-data seen external to our perceptual bodies are not external to our physical bodies, and physical events are nowhere in the perceptual space.

Although Russell concludes that our sense-data are in the physical brain, and logically he cannot be refuted (except that it would be a very peculiar concept of the brain), yet there are difficulties which make this view unacceptable.

The conclusion does not necessarily follow from the premises. From the fact that the causal process ends in the brain, all that follows is that the *physical* process ends in the physical brain, and not that there is not *another* step which is the actual coming into existence of the sense-datum in a sense-field, which need not be in the physical brain. The physical process consists of a chain of electromagnetic waves, travelling through the space to the sense-organs, the nerves and the brain, and the last link in this chain would probably be the same type of imperceptible physical event, say, some electro-chemical process. This is *not* our sense-datum (it may be the counterpart or the physical analogue of the sense-datum). Such

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electromagnetic process is supposed to be colourless (or at least not known to have any colour). What probably is in the physical brain is a molecular arrangement, resulting in our seeing, as for example, a red patch. Can we really say that "this red patch" is in the physical brain, which is presumably itself composed of colourless physical molecules?

Secondly, the physical events on Russell's own definition are either completely unknown, or if known, are imperceptible inferred events.[11] Those which compose a physical object should, by definition, be imperceptible. Now, sense-data are not imperceptible. All the events which are perceptible are termed by Russell as 'mental'.[12] Sense-data on this definition are 'mental' events. All these mental events are said to be constitutive of the physical brain, as members of that group which is the physical brain. Thus we have the concept of one physical object, namely, the brain, which consists of both mental and physical events. Actually, therefore, it should not be called 'physical' brain, according to the definition of physical.

But now the question is, What is *perception*? Who experiences these sense-data? On Russell's theory of neutral monism, there is no mind (except some mental events) which could sense these sense-data (or experience these mental events). Does the brain perceive part of its own self? Does the physical body (sense-organs) perceive part of its own brain? Do some mental events perceive other mental events? In this view, the very concept of perception becomes chaotic and loses its meaning.

The physical brain here is conceived as a sort of container which contains the entire perceptual universe perceived from the observer's point of view. If we consider the percept of the brain, in relation to all other percepts of all other physical objects, it does not show anything peculiar which may enable us to infer that its corresponding physical object, that is, the physical brain, has the privilege to be the container of all our

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sense-data. It means that the causal inferences from perception give us the wrong idea of the relation between physical brain and its percept, since all the percepts are regarded to have some sort of causal relation to their corresponding physical objects, as the percept of the brain has to be the physical brain. All other percepts, that is, of tables and chairs, are not regarded as inside their corresponding physical objects, that is, physical tables and chairs, but the percept of the brain (with all other percepts) is supposed to be inside the physical brain. If, on other grounds, we hold this view, it follows that, though there is such a *fundamental* difference between the physical brain and all other physical objects, that is, the former does but latter do not contain all our sense-data, and yet their corresponding percepts have nothing to show this difference. Thus causal inference from percept of the brain to the physical brain gives us wrong notions of the relation between the two and is misleading (that is, does not place the sense-datum in the brain). If so, how can we hold that any causal inference indicating the relation between sense-data and any physical object is reliable, as an approximately correct guide to their relation?

In view of these difficulties, we may conclude that sense-data are presumably not in the physical brain; in fact, they should not be spoken of as in the physical space at all. The unperceived physical processes cause certain events in the percipient's brain, which, together with the mind, generate a sense-datum in sense-field.

On this view, one can hold that every person perceives the universe from his own peculiar point of view, not as it is, but as his sense-organs, nerves and brain present it to him after making their own special contribution. Physical human body has at least two peculiarities (it may have more but that does not concern us here), which other physical objects do not have. (a) It has an opening in the external world, not a direct opening but an indirect one through sense-organs. (b) It is

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connected with a mind in some sense which perceives this external world, not as it is, but in representation as presented by our senses.

It has been argued by some modern neurologists that one function of our nervous system is to create a symbolic representation of the external world, which is private to us. As to the question, How is such a representation possible ?, the answer is given in terms of an analogy with the television images. In the physical world we gain information regarding something we do not see, by special mechanism called 'non-symbolic representational mechanism' like the television, cinema, etc. A mechanism is devised which reproduces in black and white or colour, the shapes, relative sizes, spatial relations and shades of the objects at the input of the mechanism. Smythies suggests that sense-data bear the same kind of relation to physical objects as images on the television screen to actual people in the television studio. Thus he postulates causal processes. The conclusion is that *televisual system behaves very much like neurovisual* system. To the objection that we recognize television images because we can and have previously seen people at the television studio, Smythies replies that it is not impossible to gain information, in principle, about something we never saw before, as for example, by means of a trip-wire camera we can photograph objects we have never seen.[13] Now, cameras and tape-recorders also have a sort of opening, that is, they can receive and record physical happenings, but again not directly. They have a structure similar to the human eye and ear, so their record coincides with human impressions. But they are not connected with the mind, so presumably they are not conscious of those impressions. As to the mind, it cannot be said to be in the perceptual space. The question whether it is in the physical space or not does not concern us. Whatever mind may mean, it is reasonable to suggest that it perceives perceptual space and so cannot be in the perceptual space. Unless we

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hold some such view, the concept of perception does not seem to have any meaning.

So our conclusion is that sensory and physical spaces can in no sense be regarded as identical. If so, how much can we infer about the unperceived physical world?

When we open our eyes, we are confronted with a sense-field, with various sense-data at different visual depths from us (that is, from the somatic sense-data) and at various distances from each other. These are to be regarded as *effects* from certain causal chains, which start at various points in the physical space in the manner explained above. The families of these sense-data seem to behave in a manner which provides the *evidence* that (a) the unperceived physical causes are independent of each other and (b) they sometimes stand in a special kind of relation to each other. These two facts enable us to infer that the universe contains, what Russell calls, 'separable causal chains' at centres in the physical space, and these physical events sometimes stand is causal relation to each other, that is, one physical event is the cause of another, which establishes 'horizontal' causality.

Russell postulates[14] only similarity of structure between our sense-data and their unperceived physical causes. As to their other properties, he holds that we must remain 'agnostic'. This question does not concern us in great detail. Hypothetically, we can assert both similarity and difference. If both are equally probable and if similarity hypothesis is more suited to explain facts, we could accept it as highly probable. Thus the existence of some unperceived events is practically certain, and their structural similarity is very highly probable, though not necessary. As to their intrinsic nature, we do not *know* anything, though it is open to scientific investigation.[15]

Can we also infer the rough location of these unperceived physical events in the physical space? We cannot say that they are located in that region of space where sense-data are

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sensed. Perhaps a view of the following kind may be an explanation. A number of events take place in all regions of physical space. The percipient's physical body is also a physical object. Some physical events would probably be nearer to *this* physical object in the physical space, while others would be far away. Those events which are nearer to the person's physical body start very short causal chains which result in certain sense-data being sensed, some of which are tactual sense-data. Even tactual sense-data are not identical with the unperceived physical object, because they are in the tactual space and not in the physical space. There is a time-lapse also between (a) the contacts of the two physical objects, namely, our physical body and the other physical objects, the impulses travelling up to the brain, and (b) coming into existence of the sense-datum. Even our physical body is represented to us by means of perceptual body, that is, somatic sense-field. Under anesthesia, for instance, no perceptual body exists, but there is a physical object. In dreams, our perceptual body seems to wander around, whereas the presumption is that the physical body does not. Due to the very short causal chains, it is sometimes easier to infer the location of an object which is nearer to our physical body than the one which is far, as for example, in touch; yet it does not mean, as is often held, that in touch we are in direct contact with the independently existing physical reality.

Thus the conclusion we seem to be driven to is that our sense-data and sensory spaces are unique existents in the universe. All the other alternatives are unsatisfactory. Either they could be in the mind, but what is ordinarily meant by 'mental' is thoughts, emotions and desires and not tables and chairs, which, in the last analysis, are resolved into coloured patches, etc. They are not physical, in the sense of being independent, permanent, neutral entities, because they depend for their existence and persistence on the percipient's physiological and psychological mechanism. They are not in the brain either because

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of the difficulties we examined above. Thus, if they are neither mental, nor cerebral, nor physical, they must have a status of their own. Yet, since they are so intimately related to all these factors, they cannot be entirely independent entities either. They seem to have a unique but dependent existence and are to us effects of the independently existing universe. Ordinarily, *we take it for granted* that they are independently existing physical objects and our belief is justified because of their causal relation with independently existing physical events. But actually *they are the effects* of such physical events. Common sense unconsciously constructs the notion of one physical object on the basis of the families of sense-data which, being dependent on the percipient, no longer exist when not being sensed. But it does *not* follow that nothing exists. Certain physical processes go on in the universe, which are also capable of causing our sense-data when physiological and psychological conditions are present. This is the answer that can be given to the gap problem and, because it explains the phenomenon of perception and avoids the difficulties in other theories, is acceptable on sense-datum theory.

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Part V

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CHAPTER 15

SENSE-DATA AND LANGUAGE

INTRODUCTORY

The sense-data theory has recently faced a very important objection (which more or less amounts to its rejection as a theory) which springs from the latest trend in the modern British philosophy, namely, the linguistic trend. The objection has two different forms, one developing from the other.

(a) It is said that the sense-datum theory is no theory at all, but only an alternative language; a different way of referring to the same thing, a different description of the same facts which the physical object language also describes. The questions it raises are not factual but linguistic. It is held that the physical object language (expressing the naive-realist's claim of the direct perception of the physical world) is not essentially wrong or misleading (as sense-datum theorists would say), so far as describing facts is concerned, but sense-datum language is preferable for certain reasons, and has some primacy over physical object language. But, in effect, if the two languages are alternatives, it would not matter or be wrong,

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whether we say we directly perceive the physical world or our sense-data.

(b) To this kind of approach—namely, speaking about sense-data is another way of speaking about physical objects — there has been another set of objections. It is said that the idea of a 'private language' is at the basis of sense-datum language, which is a contradiction in terms; it is based on private experiences, and private experiences are incommunicable. Moreover, there is no pure sensory language, as it borrows words from physical object language, so there can be no sense-datum language. There is no ordinary usage for the word sense-data; in fact, it is not meaningful to talk in terms of sense-data at all. The conclusion drawn is that there are no sense-data. Thus the objections to sense-datum 'language' have been brought to bear on the very notion of sense-data.

Now, it is possible to hold that there are certain terms and words used exclusively by sense-datum theory, which can be called a kind of terminology (though it may not be called a language), and the objections to the possibility of a sense-datum terminology can be answered. It is also possible to hold that sense-data notion is not ultimately a linguistic question, that is, not a different way of saying the same thing. I would argue that (a) it is possible to talk in terms of sense-data meaningfully; (b) it is true that there is no pure sensory language which has no reference to physical object language at all, but it may be an objection against those who talk of a translation of physical object statements fully into sense-datum statements and claim equivalence for both, kinds of statements, but not against the sense-datum theory; and (c) the question of sense-data is not a purely linguistic question.

First, we shall examine and attempt to answer the objections raised against the possibility of sense-datum language because they throw a doubt on the very notion of sense-data as an existential notion. Later, we shall argue that it is not

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a purely verbal matter and deal with the objections against sense-datum theory raised by those who consider the question of sense-data only a linguistic question.

SENSE-DATUM TERMINOLOGY

It has been suggested that the idea of a private language is to be found at the basis of sense-datum language. Now, taking the term 'sense-data' to mean whatever is our most immediate, direct sense-experience, the question arises, Is sense-datum language a private language? If so, in what sense is it to be called a private language?

1. (a) In what sense are we using the term private?
   (b) If it is opposed to the common, public, physical object language, then is the concept of a private language a contradiction in terms?
   (c) Is sense-datum language private in this sense?

2. The other objection to sense-datum language is that it presupposes physical object language, that is, it is not possible to speak of sense-data except in terms of physical objects. This again means two things: (i) either that it employs words of physical object language, or (ii) that the meaning of the term 'sense-data' is always shown with reference to physical objects.

1. Let us first examine the question concerning the meaning of private language.

Wittgenstein, asserts in *Philosophical Investigations*, that if a language is to be a means of communication, there must be agreement, both in definitions and in judgement (242).[1] A private language, according to him, will lack these two characteristics. He defines a private language thus: "There are certain criteria in a man's behaviour. . .for his thinking he understands (words), attaching some meanings to the words but not the right one. . . .Sounds which no one else understands, but which 'I appear to understand', might be called a private language"

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(269). Again he asks: "Could we imagine a language in which a person could write or give vocal expressions to his inner experiences. . .for his private use?" He rules out the possibility that this should be done in the way it is done in ordinary language. ". . . The individual words of this language should refer to what can only be known to the person, his immediate private sensations, so another person cannot understand the language" (243).

Now, it is important to note that Wittgenstein's concept of a private language is that which no one else understands. If so, that is, if this concept of no one else understanding, it goes into the very notion of a private language, then it is obvious that whatever the words or sentences of the private language are, whatever definitions the inventor of the language may give them, they are not communicable, not open to other people's inspection, because by definition no one else should understand it. If others come to understand it, it is not a private language any more. Wittgenstein says that in a private language the very concept of definition (as arrived at by general agreement) loses its meaning (p.268). Suppose I use a symbol X for a sensation (the meaning of a word according to Wittgenstein is its constant use), and in order to remember the connection right in the future, give it a sort of ostensive definition by concentrating my attention on it, I would ask, of what use is it? If I remember it wrongly in future, I cannot correct it since there is no criterion for its correctness. That is why, according to Wittgenstein, such a language will be no language.

Now, it has been argued that, even in this sense of private language, where one person invents a symbol and determines its meanings by constant use, it is possible to have a language. Strawson[2] says that, suppose a man were to give private names to his sensations as well as to the physical objects. If someone else was to observe his actions, and hear the words in relation to his surroundings and physical objects, he would, in

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course of time, learn the meanings (constant use) of the physical object words and thus a language would evolve. Then the behaviour of each is a check on the behaviour of the other. But does it mean that before the observer learnt the language there was no use, no meaning of the physical object words as invented and used by the inventor of the language? If physical object words had meanings, then why should we not suppose that other words which stood for sensations also had meaning?

Moreover, it is not necessary for an observer to study the behaviour and words of the inventor. The inventor of the new language can himself show another person the meaning of his words which stand for private experiences. It is said that if a private experience is something which I alone have, and know, I cannot convey it to others. Now, Wellman[3] argues that even in this case, a kind of ostensive definition (or demonstration) is possible. A can show a blue object to B to indicate what his experience of blue is like. What is required is not the numerical identity of the two experiences, but a kind of qualitative similarity. The assumption for this kind of ostensive definition is that, in the absence of any evidence to the contrary, different people have similar experiences, when confronted with the same object. This assumption is meaningless on verifiability theory. From that point of view, we are at liberty to make either of the two assumptions, that is, (1) people have similar experiences, or that (2) they have different experiences. Both assumptions cannot be empirically verified, but if the similarity of experiences explains the course of experiences, it is more acceptable. So privacy of experiences does not necessarily render them incommunicable.

Now, we have to ask: Assuming that some sort of private language is possible and our experiences communicable in the senses explained above, is sense-datum language private in this sense? The first thing to note is that whatever recommendations and procedures sense-datum philosophers have

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suggested for a sense-datum terminology have been perfectly intelligible. They have been able to explain what they want sense-datum terminology to be. Thus sense-datum terminology here cannot be said to be a private language in Wittgenstein's sense, "which no one else understands", but the speaker, if there be a speaker. The very fact that sense-datum terminology has been criticized (for various reasons) shows that its critics understand it; they could not criticize without understanding it? Thus, it is not Wittgenstein's sense of a private language which is applicable to this language. It is a different language, if a language at all. There may be other practical difficulties in fully developing a sense-datum terminology, but it is not self-contradictory.

The notion of Wittgenstein's private language implies that the person who wants to have a private language for his private use invents certain unintelligible sounds for his private sensations. Sense-datum philosophers do not invent any new words to explain what they recommend and what they mean. Whether sense-datum notion is to be taken as a discovery of new facts and features of our experience or a new way of looking at the world, it is explained in a language which everyone understands. It is not their motive that no one else should understand, but that everyone should be able to see their point.

How do sense-datum philosophers use language and what do they suggest for their terminology? All that they say is this: ordinary physical object language does not bring out certain peculiarities of our empirical world and relation between our experiences and what we call the physical world. Therefore, if we speak for philosophical purposes in terms of human experiences, it will clarify many issues and bring certain undetected features into open, which the ordinary language overlooks and over-simplifies. Now, how can we speak in terms of human experiences? The general form would be: "if we have

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certain visual sense-data of such-and-such a kind, namely, seeing a table, then we can have certain other tactual sense-data of such-and-such other kinds", that is, of touching it. Innumerable instances could be given. But here it is clear that no invented symbol is substituted, for example, 'X' for 'visual experience' or 'Y' for 'tactual experiences', which would make the meaning of the words unintelligible.

Thus, if we take these three points into account, namely, (a) we do understand sense-datum terminology because (b) no new symbols are invented which would be unintelligible and (c) the recommendation for and the use of sense-datum terminology is different from the one suggested by Wittgenstein for a private language, we can conclude that sense-datum language is not Wittgenstein's private language.

Next we see that sense-datum terminology deals with private experiences. Wittgenstein, having concluded that a private language of sensation is not possible (in his sense of 'private'), examines whether in public language it is possible to talk about "private" sensation. He holds that it is not possible to talk of private experiences, neither of other people's nor of our own. On "privacy of sensation" view we do not know whether other people have sensations or not, because we cannot observe them. All that we can observe is the expression of a sensation, or behaviour of others, as for example, we do not see the 'pain' of another person, but only pain-behaviour. In order to talk about such experiences of other people, we need criteria for identifying them and it is the 'expression of sensation' and not the sensation that counts as the criterion. He asks, How do words refer to sensation? His answer is that words get associated with natural expression of sensation (p. 256); as for example, the word 'pain' is associated with crying, moaning, etc. (p. 244). If there were no natural expressions of sensation, then, Wittgenstein points out, there would be no common language of sensation, as there would be

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nothing which could be publicly observed. Thus, language is concerned with expression and behaviour, and even if there are sensations, language cannot grasp them. It is not as if such inner experiences were nothing, but, for the purpose of language, on privacy view of sensation, a nothing would do just as well as something.

But from this view, it does not follow that there are no private experiences or no sense-data. Wittgenstein only shows that it is very difficult to have a language which grasps these as private experiences. So, communication of them would be difficult, but, as we saw earlier, not impossible. He only disagrees with the picture which a certain view of language presents, not with the existence of private experiences.

Moreover, it is not all impossible to express our sensation. The words 'sensation', 'sense-data', 'pain', etc., carry with them the implications and meanings (determined by accepted usage) that they stand for private (and in some sense mental) experiences with all the characteristics of private experiences. Thus, even if we cannot have a personal private language of sensation, we can and do talk about sensations and sense-data in ordinary language words.

This very fact forms, in view of some recent linguistic philosophers, a great objection to sense-datum language. Sense-datum terminology presupposes physical object terminology and the understanding of physical object language.[4] It is also shown by the discussion above that in talking in terms of sense-data no new symbols are invented. How can we talk about sense-data except with reference to and in terms of ordinary physical object words? There may be a logical possibility that if all the present human generation, but a few babies, were to be wiped out from the surface of the earth, then these babies might grow up and invent a different language, where individual words refer only to human experiences, without

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implying any durable extended substances. But as a matter of fact, as things are, we do not. Even if we talk in terms of human experiences, then human body is a physical object. Or at least the concept of a 'person' as understood in ordinary language is presupposed. The conditions required for such experiences to occur are again physical. Therefore, philosophers have talked about sense-data in ordinary language. Even the words 'sense' and 'data' belong to our ordinary language. We talk of them as 'private', 'hard', and these are also derived from the way we ordinarily speak about physical objects. At this stage (rather at the stage when philosophers put forward the notion of sense-data) it is our developed, complicated linguistic habits, and habits of thinking determined by highly sophisticated structure of our language that set limits to the way we speak. But merely because we use such words, it is not guarantee that the world is really as the language represents it to be. There may be no substances for which substantive words are supposed to stand, or a world of universals, simply because there are corresponding expressions in our languages. Still we cannot help clarifying the ambiguities and confusions in our language by using the same language. Thus here we admit that the starting-point of sense-datum terminology is ordinary physical object language. We start with the concept of physical object of our ordinary conscious perceptual experiences. We cannot help having it.

But this admission does not form a knock-down proof that the sense-datum terminology is either not possible or futile. It is possible to analyse the contents of a physical object in terms of sense-data (whether partly or wholly), that is, they can be spoken of in sense-datum terminology, though the actual individual words of this terminology may be borrowed from physical object language. What sense-datum philosophers do is to use the ordinary words to express different facts by assigning them special meanings. Their main purpose is to clarify the

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ambiguous and oversimplified concepts that the physical object language embodies, to distinguish between different factors involved in the notions that its words convey. If their purpose is served by re-arranging already existing symbols and words, by using the same grammar of sentence formation, then a sense-datum terminology is possible. Thus to say that it presupposes already existing language is not an objection to the sense-datum *theory*.

It is true that due to this difficulty, a general verbal confusion can arise here, and those who do not understand the meaning of the sense-datum philosopher can argue from the other side. This confusion arises because the words used for sensations are associated with physical objects. Ryle[5] points out that there are no 'neat' sensation words. It is only with reference to physical objects that sensations are described. When people talk of having a glimpse, it is only as a glimpse of. . .robin or haystack. Words like 'pain', 'itches', 'stabs', 'glows' derive their significance from ordinary objects like fleas, daggers, radiators, etc. But we must note that these are used only to show what kinds of sensation we are referring to, and it does not mean that we cannot distinguish between the actual experience and the physical object it is associated with.

The main source of confusion is this. It is true that words like 'red', 'green', 'see', 'hear', 'touch' come to have a sort of double use. In their ordinary use, no doubt, we say 'I see a red book', but in a special sense I only see (visually sense) a red sense-datum. Here the word 'see' is the same, but is used in different senses. So it is not difficult either to confuse them, or to emphasize only one sense and ignore or deny the rest. Now, if different meanings are assigned to some words for special purposes, and their implications and meanings are explained, then there remains no reason for confusion. If someone, who wants to retain naive-realistic beliefs and naive-

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realistic terminology, asks a sense-datum philosopher — "Is it not 'correct' to say that, in a sense, we see books and chairs and tables?", then the answer is Yes. In the ordinary sense, it is grammatically correct and it expresses a common belief. But then the philosopher tries to penetrate a level deeper into the grounds and implications of these beliefs that we directly see tables and chairs, and find that they are open to sense-datum analysis required by certain facts. If sense-datum analysis is justified, and if sense-datum terminology requires physical object language, then a sense-datum philosopher is perfectly entitled to use ordinary language for his special purposes, endowing it with special meanings. To avoid the confusion, he should be more careful and not use words current for physical objects. He should, for example, say 'I visually sense' instead of 'see' a sense-datum. But if he has, on any particular occasion, failed to do so, it is not an objection to the basic features of sense-datum theory.

ARE QUESTIONS CONCERNING SENSE-DATA FACTUAL OR LINGUISTIC?

The next question is this — Are the questions regarding 'sense-data' really only linguistic questions? Granted that we use certain words legitimately in a special sense, and granted that there is a sense-datum terminology, is that all? Is it just a matter of expressing the same thing in a different way? If, instead of saying 'I see a red book', I say 'I sense a red sense-datum', or 'red book-like sense-datum', does it mean that I am simply analysing or translating the first statement into the second, and do both statements refer to the same thing? If the 'naive-realists' claim could also be upheld[6] and physical object language was adequate to describe 'facts', then the two statements would eventually mean the same thing. It would follow that 'factually' it does not matter whether we say we see physical

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objects directly or sense-data directly. It is merely a matter of verbal choice which we make for certain reasons.

Now, we may ask, In what sense can we say that it does not matter whether I talk in terms of a physical object or sense-data? The only way in which physical object language and sense-datum terminology could be said to be two 'alternative' languages or descriptions of the same thing is that the terms 'sense-data' and 'physical objects' should have the same meaning or refer to exactly the same things. In that case, they could be treated as alternative verbal conventions and it would not really make any difference whether we talk in terms of one or the other. Now, let us take the different senses in which the term 'physical' can be used, and see whether we can hold that the two are in any sense equivalent terms.

(1) The thesis of naive-realism is that the common sense physical objects are directly perceived entities. Now, if common sense objects are to be called 'data of our sense', then, of course, it would not matter whether we preferred to say that we directly perceive physical objects or sense sense-data. But the assumptions that go into the very notion of common sense physical objects are that they are directly perceptible and also that they persist unperceived. If these coloured patches etc. were parts of physical objects, then they would also persist unperceived. Now, apart from other arguments which refute naive-realism, on Ayer's own view of sense-data, it cannot be retained, because he holds that sense-data are dependent on being perceived and do not exist unsensed.[7] If so, they are not equivalent to the common sense physical objects. Thus, as far as naive-realistic view of the physical objects is concerned, it would be wrong to say, even on Ayer's view of sense-data, that it makes no difference whether we say that we directly perceive sense-data or physical objects. So, sense-data language cannot just be an alternative language on common sense view of the physical objects.

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(2) On the other hand, if it is agreed that the physical objects are only groups or families of sense-data, and, therefore, it does not matter whether we say we directly perceive sense-data or physical objects, we come to phenomenalism. Due to innumerable difficulties, which have been examined in Chapter 11 and 12 of this book, phenomenalism cannot be maintained, neither in its factual nor in its linguistic form. If, as shown, the phenomenalistic view of the physical objects is not tenable, it follows that physical object statements cannot be equivalent to sense-datum statements, actual or hypothetical. Physical object statements are different owing to their reference to something different, which is not, and in some cases cannot be, the data of our senses, as for example, certain physical processes, other persons' sense-data, etc. This difference is not merely linguistic, that is, choice of using one set of terms rather than another, which eventually comes to the same thing. It is a factual difference, in the sense that there are some *facts* which make the equivalence of two kinds of statements impossible. If so, it follows we are not dealing with two alternative languages, both referring to the same facts, but with two different kinds of theories dealing with different kinds of facts or entities. If someone insists that we know physical objects only in phenomenalistic sense, he cannot prove that there is nothing else existing independently of our perception. All he can say is that we cannot directly perceive it in the sense of being directly acquainted with it. But we may know it in some other way than by direct acquaintance, for example, by scientific investigation. Thus, if something exists unperceived, and if it enters into our notion of the physical object, then, to talk of sense-data is not to talk of physical objects in different words. This is the view that has been sought to be established in this book. We cannot then say that we directly perceive physical objects, because direct perception, which refers only to our sense-data, would not refer to the unperceived parts of the physical object.

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So the two languages would not be alternative languages.

I would like to mention that Moore, who purposely defines his sense-data in a different way so as to allow the possibility that (a) sense-data may be identical with parts of the surfaces of physical objects[8] (as understood by common sense), that (b) physical objects may be directly perceptible[9] and that (c) sense-data may exist unsensed,[10] does not say that sense-data theory is an alternative language. Though, on his theory, if it were true, it would be more consistent to say that since sense-data are parts of physical surfaces, to talk of sense-data is not to talk of something different from physical objects. When he asks whether this presented object was identical with the surface of a 'human hand', or 'inkstand', one of the things he meant was whether 'this presented object' was numerically the same as the surface of the hand which could also exist unsensed. If it was the same, then the reference to sense-data is another way of referring to physical objects. But for a phenomenalist there is no question of anything actually existing independently of perception. So, his argument would be that groups of actual and possible sense-data are what we call a physical object (or statements referring to physical objects are reducible completely to actual and hypothetical sense-data statements); hence it follows that they are alternative ways of referring to the same thing. But if the premises cannot be maintained, the conclusion drawn cannot be accepted either.

It is often asked — In talking about sense-data, are we or are we not talking about physical objects? The answer could be both 'yes' and 'no'. In one sense, the concept of 'immediate sense-experience' is wider than that of the physical object. It includes not only the so-called normal perceptions, but also illusions, hallucinations, double visions, images, mirror images, etc. In these cases, to say that we saw a *physical object*, with all the implications of the term, would be very strange. Whereas,

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if the theory of sense-data was an alternative language, we could say so. If by 'physical objects' we mean objects which are capable of existing unperceived, which are common and public among many percipients, then in hallucinatory experiences, dreams, double visions, what we perceive is not a physical object, but they undoubtedly are sense-data.

In talking about sense-data, we do refer to physical objects, but not in the same sense in which a naive-realist does. According to a naive-realist, the physical objects are directly perceived. On our version of the sense-datum theory the notion of a physical object is a derivative and constructed notion. It is not *'all given'* as common sense conceives it to be, nor is it *'only given'* as phenomenalists contend. A lot of unconscious acceptance, synthesis are involved in the ordinary notions of a physical object, which common sense does not suspect, partly because it is achieved before common sense arises, and partly because these are beyond common sense, and can be known on philosophical and scientific reflection. The reason for holding the notion of a physical object as a derivative notion is that it explains all the facts, since illusions of all kinds are as much facts of experience. Thus, when we reject naive-realism, we do not just reject a way of speaking, but a whole concept and a theory (if we can call it a theory) and replace it by another theory and not just by another language.

Why was the sense-datum theory considered to be a linguistic device, a matter of verbal choice, or of definition and not taken as a factual theory?

(1) It is pointed out, truly, that certain questions regarding sense-data are verbal and are to be answered by making certain arbitrary linguistic recommendations[11] and conventions, for example, What is to count as one sense-datum? What is the size and duration of one sense-datum? Am I to call a rose one sense-datum, or a rose-bush one sense-datum? Moreover, questions like, Can sense-data change? Can they be different from what

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they appear to be, etc., are undoubtedly verbal and are to be decided according to the definitions and conventions one adopts. The definitions adopted should be such as to mark sense-datum terminology clearly from physical object language. But it must be noted that all these questions fall within the realm of sense-data, once we have discovered the general framework of sense-data category. They do not relate to the speculative question, namely, whether and for what reasons we should interpret our experience in terms of sense-data and not in those of the physical objects. Besides these, one major question which sense-datum theory asks is, whether anything exists beyond and independently of us and of our sense-data or not, to which our sense-data are related ? These questions cannot be answered by linguistic conventions, but by examining the evidence from other quarters.

(2) There is another source of confusion, where the factual and the verbal questions get mixed, and that is the ambiguity of the word '*physical*'. The questions, "Is there anything independent of our perception, and what is it, and what is its relation to our sense-data ?" are factual questions. The questions: 'For what are we going to use the term physical object?'. 'To what sort of entities do we decide to give the name *physical*?' — are questions of definitions and verbal choice (with reasons for the choice). Phenomenalism *chooses* to use the term 'physical object' for the groups of sense-data and says nothing about any independent existence. Price, Broad and Russell prefer to use this term, not for the sensible objects, but for whatever exists unperceived, that is, for the entities of physics. Thus the choice of the terms is a verbal point. But what are the reasons which lead them to use the term 'physical' for the unperceived entities and not for the sensible objects ? — is a factual question, and must be kept distinct from other verbal questions. Now, the difficulty of imagining what sort of observation will enable one to answer questions regarding unperceived

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existents leads some people to regard them as linguistic questions. But these questions are to be answered, not by linguistic preferences, but by taking into account all the evidence from science, arguments from philosophy and also the evidence presented by the character of our sense-data themselves.

(3) Next, the sense-datum theory is regarded as an alternative language on the basis of the assertion that to talk about sense-data is to talk about how things 'look' or 'appear'.[12] We can describe facts by saying that physical objects appear such-and-such, as for example, a penny appears or looks elliptical. Why should there be a noun 'elliptical-looking sense-datum'? Even granted that the use of such a noun is legitimate, it does not say anything more than the 'look' terminology will say and is, therefore, superfluous. Appearing terminology is perfectly consistent with direct perception of a physical object, since we do talk of 'looks' in physical object language. Now, sense-data are described as appearances of the object. So there is no difference between the two.

But actually, by sense-data we need not mean exactly the same thing as by 'looks' or 'appearances' of physical objects. Sense-data are explained as appearances of ordinary physical objects or with reference to physical objects because, owing to our present linguistic habits, we cannot understand what sense-data are, in any other way. But that is merely auxiliary. The difference between 'look' or 'appearing' terminology and sense-datum terminology is that the former talks of looks or appearances *of* the objects; it, as if, does not let go the assumption of the existence of a physical object. It is the physical object that looks such-and-such or appears so-and-so. Sense-datum theory could start in a neutral way. It asserts nothing as to the existence or non-existence of the physical object. It leaves the question open. To say — 'I sensed a red-book-like sense-datum' — is to say nothing as to whether there was a book (as a physical object) or not. To determine whether there was, is a

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further step. From this we can see that the language of sense-data is not an alternative language for saying how things look.

Secondly, even if the appearing theory (or language) may explain cases which turn out to be those of veridical perception (that is, one could say that a physical object appears), what about total hallucinations? What about double visions and dreams? In hallucinations there is no physical object to appear (though we learn this later). In double-vision how can one physical object become two and appear as two physical objects? In all these cases, what we immediately sense are not physical objects but our sense-data. It follows that sense-datum theory is not just a description of how things look.

(4) Further, it has been argued that sense-datum theory does not make any new 'discovery'. In seeing a tomato, it is logically necessary that you should have a sense-datum, but genuine discoveries are not logical consequences of what is already known. In answer to this, it can be pointed out that the discovery of the sense-datum philosophers is the discovery that ordinary terminology goes beyond the evidence on which it rests. It does not fit facts, such as, illusion and hallucinations; it does not deny them, but ignores them. Their discovery is to point out the similarity between veridical and illusory experiences. It is not a discovery of new entities but of undetected features in, and of the fragmentary and private nature of, our sense-experiences. Thus it becomes a theory and not just a terminology. Even if there is a sense-datum language, it is not an alternative language which answers the same question which physical object language answers, nor to use it is to make certain linguistic recommendations.[13]

(5) Another important point has often been pressed—whether one regards sense-data as a theory or as a language, there is no disagreement as to the 'facts'. Whether we say we directly perceive physical objects or sense-data, it makes no practical

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difference, in the sense that we do not expect[14] anything different to happen, or expect to have experiences different from what we have always been having. So it is not an empirical matter at all.

But sense-data theory does not claim to make practical difference in the observable facts. The notion of sense-data is a theory in the sense that it systematizes and explains facts. A theory tells us 'how' and 'why' of facts. So questions like — What are illusions, their resemblance to normal perceptions and their differences, and reasons for these, the nature of the objects of our perception ? — are questions which only a philosophical theory answers, and so it cannot simply be a language, let alone an alternative language describing the same facts in different words. As explanations, very few theories are supposed to make practical differences.

These are some of the reasons which have led some philosophers to believe that sense-data theory was only an alternative language. But these points, as we saw, do not force the conclusion that it is only a language. If it was, then the objection that there is no pure sensory language would have been fatal to it. Not only that; if sense-data theory is only an alternative language, then:

(1) Why does phenomenalism fail ? Why can we not have a translation without remainder ?
(2) Why cannot someone invent a purely sensory terminology which could express all matters of fact specifically ?
(3) Since it uses physical object words, how is it to be called a different language ?
(4) If it is just another way of saying the same thing, the advantages of it are very meagre.

Thus we can conclude that it is not just a question of using different words to show the same thing, but of using English words (though they are not in common use), to point out something different. When, instead of saying 'I see a red book',

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we say 'I sense a red sense-datum', the important thing is to conceive of this red patch as divested of all its associations and assumptions; that is, associations with all the other qualities such as hardness, coldness, etc., and the assumption that it will exist unperceived in the same form, and that it is part of a larger whole which others can also see. Now, when it is said that sense-data theory is merely a different language, all these requirements are not fulfilled. 'I see a red book' can be translated into German or French and may still carry all these implications with it. Ayer, of course, gives a number of conventions on how sense-datum language is to be developed. But, as we have seen, a translation of physical object statements into sense-datum statements cannot be carried out; so it is not an alternative language.

Now we may ask, What is the specific factual question regarding the sense-datum theory which distinguishes it from a mere language view? Why do we say that, as a matter of fact, we do not perceive physical reality directly but only our sense-data? In replying to the criticisms against the sense-datum theory, we have been answering this question indirectly. A very important question that the sense-datum theory asks is — Does the same thing which I directly sense continue to exist unsensed or, in other words, do I sense directly what exists independently of our perception as well that is, whether naive-realism is a tenable position? If not, then do we find some evidence in sense-experience (taking our sense-data as the only directly sensible objects) as forming a rational justification for holding a belief in the independent existence of the physical objects? Now, these are empirical questions, and answers to them, as well as refutation of naive-realism, are matters of fact. Ayer says that, if a naive-realist gives up assumptions regarding physical objects, and changes his terminology, he cannot be refuted by arguments from illusion. But, if he gives up physical object assumptions, he cannot be called a naive-realist. Such questions

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cannot be answered either psychologically, that is, by direct observation, or by examining the usages of ordinary words like 'see' and 'touch', etc., but by examining the evidence presented by various sciences, and certain facts and arguments from philosophy.

Now, on verifiability theory, these questions are meaningless. But, if naive-realism is refuted and phenomenalism is shown to be untenable, and we want to avoid solipsism, the only alternative is to justify the assumptions regarding physical objects in ways other than actual observation. Sense-datum theory (or at least the version I am maintaining) shows that common sense can be justified in thinking what it does think, but not in the way in which it thinks it is justified, that is, what exists independently of us cannot be directly perceived; what we do directly perceive are our sense-data, which do not exist unsensed. The whole notion of a common sense physical object is, therefore, to be analysed in terms of sense-data and their physical causes. The sense-data cohering in "families" are *taken to be* by common sense physical objects; in fact, they are only the *evidence* that physical objects exist.

This, of course, is a radically different way of viewing the whole matter, and not just the use of different terms, or saying the same thing twice over. This will mean a change, not only in our way of speaking, but in visualizing the world in a different conceptual framework. Our senses afford us very fragmentary and indirect knowledge of what there is. The rest is bound up with the way we visualize or conceptualize the universe. Ordinarily, we visualize the unseen world similar to the seen one. Our physical object language is so constructed as to strengthen this picture, with, for example, its substantive words. Now, sense-datum theory presents a different picture in a different conceptual framework. To which picture the facts correspond must be decided by factual considerations and arguments in favour of both the views. We have to decide

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which of the two pictures accounts for all the facts. It seems that since physical object language is full of associations and implications, and goes beyond the evidence of senses, the sense-datum theory gives a better account of the facts. Naive-realism holds good for practical life and its beliefs can be justified by a causal argument.

Lastly, the fact that there is no common usage or convention of a sense-datum terminology in our ordinary language, has been brought to bear on the notion of sense-data. But as far as the technical terms are concerned, ordinary language is no judge to decide whether their usage is correct or not. We may ask a broader question — Is the analysis of any language and grammar on the whole a sound and the only method for solving general universal philosophical problems ?

Whorf[15] has argued that the basic patterns of our language were constructed by our remote ancestors and their use depends on unquestioned acceptance of these patterns. They are outside the conscious and critical control of an individual. Thus, when the natural logician talks about logic and reason, he is apt to be marching in step with grammatical facts which have a background character in *his* own language and by no means are either universal in all languages or are common substratum of human reason.

The world is presented in a kaleidoscopic flux of impressions which has to be organized by our minds, by our linguistic systems. We organize nature into concepts and ascribe significance to them largely because we are party to the agreement to organize it in this way. The agreement is implicit, but its terms are 'absolutely obligatory'. He shows that an analysis of major structural features of the language, as we might undertake in answer to the question — What do nouns or verbs stand for ? gives different results in different languages. If a philosophy of perception is to be constructed on the basis of correct usage in a language, we might have to construct different accounts

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of perception in Eskimo language, or Hopi language, or Nookta languages. To restrict thinking merely to patterns in English is to lose power of thought. It is the 'plainest' English that carries greatest assumptions. Western culture has made a provisional analysis of reality through language with no correctives. The only correctives, according to him, lie in other tongues which by independent evolution arrive at different but equally logical provisional analyses.

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CHAPTER 2

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10. A. M. Quinton, "The Problems of Perception", *Mind*, 1955.
11. Arthaveda explains that mirror reflections are the same as physical objects. We see them as different because light waves activate the eyes on two points, that is, go to two receptors and each receptor makes us see what we do see. Rods and cons of retina function separately. They are as if independent eyes. We could even sense four times. (But this does not save naive-realism, as we shall see presently.) *Aust. Jl. of Phil.*, 1957.
12. C. D. Broad, *Scientific Thought*, pp. 261-62. "Berkeley's Arguments about Material Substances". Annual Phil. Lecture, 1942. *Proc. of British Academy*, Vol. 28.
13. C. D. Broad, *Mind and its Place in Nature*, 1925, pp, 150ff.
14. J. R. Smythies, *Analysis of Perception*, 1956, pp. 83ff.
15. The research is done by S. W. Mitchell, "Remarks on the effects of Anhalonium Lewinii", *Br. Med. Jl.*, 1896, pp. 1625-29; Havelock Ellis, "Mescal, A New Artificial Paradise", *Ann. Rep. of Smithsonian Institute*, 1897, pp. 537-48; Qouted from Smythies, taken from *Jl. for the Phil. of Science*, 1953, pp. 339-47; Mitchell, S. W, loc. cit.; D. W. Prentice and F. P. Morgan, "Anhalonium Lewinii", *Therap. Gazette*, 1895, pp. 577-85; Havelock Ellis, loc. cit.; A. Knauer and W. J. M. A. Maloney, "A Preliminary Note on the Psychic Action of Mescalin", *Jl. Neur. Ment. Dis.*, 1913, pp. 397-413; K. Kulver, *Mescal, the Divine Plant and its Psychological Effects*, London, 1928.
16. The cases he quotes where such hallucinations have taken place are from C. A. E. Moberly and E. F. Jordain, *An Adventure*, London, 1911; G. W. Lambert and Kathleen Gay, "The Dieppe Raid Case", *Jl. Soc. of Psychical Research*, 1952, 36, pp. 607-18; L. Fletcher, "Recent Experiments in Hypnoticism", *Jl. Soc. Pay. Res.*, 1949, 35, pp. 101-08; G. N. M. Tyrrell, *Apparitions*, London, 1953.
17. Alfred J. Ayer, *Foundations of Empirical Knowledge*, pp. 42, 274.

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18. Alfred J. Ayer, "Review of Analysis of Perception", *Mind*, 1958, p. 559.
19. R. W. Brian, *Mind, Perception and Science*, pp. 56-61.
20. Smythies, *Analysis of Perception*, pp. 39-42.
21. Ibid., pp. 68-70.

CHAPTER 4

1. Moore prefers to call them "sensibles" in "Status of Sense-data", *Philosophical Studies*, 1914, p. 171, as it better serves his purpose. H. H. Price distinguishes between 'sense-data' and Dr. C. D. Broad's term 'sensa' (used in *Scientific Thought* and *Mind and its Place in Nature*). The term 'sensa' denotes a third kind of neutral entity which is neither mental nor physical. Thus, in this sense, Price points out that "sensa are sense-data" is not a tautology, but a synthetic proposition, *Perception*, p. 19. J. G. Warnok points out various ambiguities of the term, though it is understood to mean any one thing. *Berkeley*, Pelican, p. 237.
2. G. E. Moore, *Philosophical Studies*, 1914, pp. 168-69.
3. Ibid., pp. 170, 171.
4. Bertrand Russell, *Problems of Philosophy*, Oxford, Ch. I.
5. G. E. Moore, *Philosophical Studies*, p. 173. *Some Main Problems of Philosophy*, 1953, pp. 32, 67-68.
6. Russell and Moore both held this view in their earlier works. Bertrand Russell, *Problems of Philosophy*, 1912, p. 12; George. E. Moore, *Philosophical Studies*, 1922, p. 17, in "Refutation of Idealism", published in *Mind*, 1903; *Some Main Problems of Philosophy*, pp. 30-32. But later they gave it up. Russell, *Analysis of Mind*, 1921, and later works; George E. Moore, *Philosophy of G. E. Moore*, 1942. We shall be discussing the validity of this distinction later.
7. H. H. Price, *Perception*, 1954, p. 3. (This is what Bertrand Russell means by "hard data" in *Our Knowledge of the External World*, 1914.)
8. Ibid., pp. 4, 404.
9. Alfred J. Ayer, *Foundations of Empirical Knowledge*, p. 60. *Philosophical Essays*, p. 125.
10. A. M. Quinton, "The Problems of Perception", *Mind*, 1959, pp. 28ff. Reichenbach, *Experience and Prediction*, Univ. of Chicago, 1939, p. 164. R. J. Hirst, "The Difference Between Seeing and Observing", *Proc. Arist. Soc.*, Suppl. Vol., 1954 (He holds that sensing is not awareness

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of private object which is not at the same time awareness of public objects, p. 217.) R. A. Reid, *Knowledge and Truth.* Sense-data and knowledge by acquaintance are abstractions, epistemological ideal elements, pp. 178-79. W. Kohler, *Gestalt Psychology*, Ch. IV, N.Y., 1929 (it is not possible to discover in perception two kinds of consciousness). J. Anderson, *Proc. Arist. Soc.*, pp. 70ff. C. I. Lewis, *Mind and the World Order*, Ch. II, N.Y., 1929. J. Wild, "Concept of the Given in Empirical Philosophy", *Philo. and Phen. Research*, 1940, pp. 70-82. L. E. Hans criticizes Price's concept of "the given", as data from which theories of perception start. *Jl. of Phil.*, 1939, pp. 589ff.

11. Price seems to agree with this point and recommends the term "phenomenological inspection" instead of "sensing" which is a special attitude attainable by a voluntary effort to notice facts. Yet it does not follow that facts are not there to be noticed. *Perception*, 1954, p. ix.
12. Bertrand Russell, *Analysis of Mind*, 1921, pp. 131, 132, 139, 142. *Analysis of Matter*, pp. 187-89.
13. G. E. Moore, *Philosophy of G. E. Moore*, 1942, p. 643, ed. by Edward A. Schillip.
14. G. E. Moore, *Some Main Problems of Philosophy*, 1953 (lectures delivered in 1911).
15. G. E. Moore, *Philosophical Studies*, 1914, p. 228. "Defence of Common Sense", *Contemporary British Philosophy*, 1925, pp. 206ff.
16. G. E. Moore, *Philosophical Studies*, 1914, pp. 231-32.
17. *Contemporary British Philosophy*, Macmillan, Series II, pp. 231-32.
18. G. E. Moore, "Some Judgements of Perception", *Philosophical Studies*, 1914, p. 251.
19. Max Black, *Problems of Analysis: Philosophical Essays*, 1954, pp. 58-61; jerboa is a small jumping rodent with long legs and a long tail.
20. G. A. Paul, in *Logic and Language*, pp. 101ff., it is a sort of depression in the eye.
21. Alfred J. Ayer, *Philosophical Essays*, pp. 129-30.
22. Alfred J. Ayer, *Foundations of Empirical Knowledge*, pp. 58-59.
23. C. D. Broad, *Scientific Thought*, pp. 239-40.
24. Alfred J. Ayer, *Philosophical Essays*, p. 131.
25. G. E. Moore, *Philosophy of G. E. Moore*, 1942, p. 643.
26. Alfred J. Ayer, *Problem of Knowledge*, Pelican, p. 132.
27. Alfred J. Ayer, *Foundations of Empirical Knowledge*, p. 229.

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CHAPTER 5

1. George E. Moore, *Philosophical Studies*, 1922.
2. Ibid., p. 180.
3. George E. Moore, *Some Main Problems of Philosophy*, p. 31. "Are Materials of Sense Affections of Mind", *Arist. Soc. Proc.*, 1916-17.
4. George E. Moore, *Philosophical Studies*, p. 183. This is the same distinction between "experience" or sensation, and the object of that sensation, which Moore has asserted before in "Refutation of Idealism", *Mind*, 1903; "Nature and Reality of the Objects of Perception", *Arist. Soc. Proc.*, 1905-06. He gives up this distinction in 1942, *Philosophy of G. E. Moore*, p. 658.
5. George E. Moore, *Philosophical Studies*, pp. 170-71.
6. Ibid., pp. 176-77.
7. Ibid., p. 251.
8. George E. Moore, *Philosophy of G. E. Moore*, pp. 658-59.
9. A. C. Ewing, *Idealism*, 1934, p. 357.
10. Ibid., p. 357.
11. Ibid., pp. 360-61.
12. C. D. Broad, "Some Elementary Reflexions on Sense Perception", *Philosophy*, 1952, pp. 3-17. *Mind and its Place in Nature*, pp. 210-11. *An Examination of MacTaggart's Philosophy*, Vol. 11, 1933, p. 70.
13. C. D. Broad, *Mind, and its Place in Nature*, p. 211.
14. C. D. Broad, *Scientific Thought*, pp. 244-45, 357.
15. C. D. Broad, *Mind and its Place in Nature*, pp. 195-403.
16. C. D. Broad, *Scientific Thought*, pp. 519-20.
17. C. D. Broad, *Mind and its Place in Nature*, p. 182.
18. C. D. Broad, *Scientific Thought*, pp. 519-20.
19. Ibid., pp. 239-40.
20. H. H. Price, *Perception*, p. 49.
21. Bertrand Russell, *Problems of Philosophy*, 1954 edition, pp. 16, 85.
22. Bertrand Russell, *Mysticism and Logic*, p. 151 (1910), 1929 edition.
23. Bertrand Russell, *Our Knowledge of the External World* (1914), 1926 edition, p. 95.
24. H. H. Price, *Perception*, pp. 53-54.
25. George E. Moore, *Philosophical Studies*, p. 181.
26. H. H. Price, *Perception*, pp. 113-15.
27. Alfred J. Ayer, *Foundations of Empirical Knowledge*, p. 68.
28. Ibid., p. 69.

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29. Ibid., pp. 71-72.
30. George E. Moore, *Philosophy of G. E. Moore*, p. 660.

CHAPTER 6

1. George E. Moore, *Philosophical Studies*, pp. 144-45.
2. C. D. Broad, *Mind and its Place in Nature*, pp. 181-82.
3. Ibid., pp. 195, 403.
4. Ibid., pp. 239-40, 244.
5. C. D. Broad, *Scientific Thought*, p. 357.
6. Bertrand Russell, *Our Knowledge of the External World*, 1926, p. 148.
7. Alfred J. Ayer, *Foundations of Empirical Knowledge*, pp. 132-34.
8. ibid., p. 123.
9. J. Austin, "Other Minds", *Logic and Language*, Series II.

CHAPTER 7

1. George E. Moore, "Refutation of Idealism", *Philosophical Studies*, pp. 17-19.
2. Bertrand Russell, *Problems of Philosophy*, Ch. I.
3. George E. Moore, *Some Main Problems of Philosophy*, 1912. "Status of Sense-data", *Philosophical Studies*.
4. C. D. Broad, *Scientific Thought*, pp. 254-57. *Berkeley's Arguments about Material Substance*, British Academy Lecture, Vol. 28, 1942. *An Examination of McTaggart's Philosophy*, Vol. II, Part I, 1933, Ch. 27, p. 77.
5. Bertrand Russell, *Our Knowledge of the External World*, 1926, p. 83. And all the works after 1921. *Analysis of Mind*, 1921, p. 148.
6. George E. Moore, *Philosophy of G. E. Moore*, 1942, pp. 653-60.
7. George E. Moore, *Some Main Problems of Philosophy*, p. 49.
8. H. H. Price, *Perception*, pp. 44, 49, 147, 149.
9. H. H. Price, "Sense-Datum Fallacy", *Proc. Arist. Soc.* Suppl., Vol., 1938.
10. G. Ryle. *Concept of Mind*, 1949.
11. Collingwood's criticism is that sense-data are a philosophical error, because knowledge as a whole is identified with sensation and sense-data are objects of sensation, but there are no objects of pure sensation. (We shall presently discuss in what sense can we be said to 'know' sense-data.) "Sensation and Thought", *Proc. Arist. Soc.*, 1923-24.

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CHAPTER 8

1. H. H. Price, *Perception*, p. 127.
2. G. Ryle, *Concept of Mind*, p. 209; Alfred J. Ayer, *Problems of Knowledge*.
3. H. H. Price, *Preception*, pp. 128-29.
4. Bertrand Russell, *Analysis of Matter*, 1928, pp. 382-84; *Human Knowledge*, 1948, p. 225; Paul A. Schillp ed., *Philosophy of Bertrand Russell*, 1949, pp. 705-706.
5. Bertrand Russell, *Analysis of Matter*, p. 265.
6. Bertrand Russell, *Human Knowledge*, 1948, pp. 220, 245; "What is Mind?", *J. Phil.*, 1959, pp. 5-12.
7. The importance of the evidence from neurology to the problem of perception is argued by neurologists like W. R. Brain, *Mind, Perception & Science*. "The Neurological Approach to the problem of Perception", *Philosophy*, 1946. E. D. Adrian, *Basis of Sensation*. J. R. Smythies, *Analysis of Perception*.
8. C. D. Broad, *Scientific Thought*, p. 505.
9. Ibid., p. 508.
10. R. J. Hirst, *Problems of Perception*, 1959, p. 150.

CHAPTER 10

1. Here we shall undertake to criticize Moore's specific views. But it should be remembered that a number of arguments given in Chapter I (against naive-realism) apply to Moore's views as well. In order to avoid repetition, they will not be mentioned here.
2. George E. Moore, "Status of Sense-Data", *Philosophical Studies*, pp. 187ff.; *Some Main Problems of Philosophy*, 1955, pp. 33ff. (Lectures delivered in 1910-11.)
3. George E. Moore, "Some Judgements of Perception", *Philosophical Studies*, pp. 220-52.
4. George E. Moore, *Philosophical Studies*, p. 228, in *Contemporary British Philosophy* II, p. 206; "The Nature of Sensible Appearance", *Proc. Arist. Soc.*, Suppl. Vol., 1926, pp. 181, 185.
5. George E. Moore, *Philosophical Studies*, pp. 232, 236; *Contemporary British Philosophy* II, p. 218. *British Philosophy in Mid-Century*, C. A. Mace ed., p. 210. "Is there Knowledge by Acquaintance" (Symposium), *Proc. Arist. Soc.*, Suppl. Vol., 1919, pp. 179-95 (181); "The Nature of Sensible Appearance", *Proc. Arist. Soc.*, Suppl. Vol., 1926, pp. 179-89 (181).

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6. George E. Moore, "Visual Sense-Data", in *British Philosophy in Mid-Century*, C. A. Mace ed.
7. George E. Moore, in *Contemporary British Philosophy* II, pp. 193ff., 206, 216.
8. George E. Moore, "Proofs of External World", 1939, Published in *Philosphical Papers*, 1959, pp. 127-50.
9. George E. Moore, *Philosophy of G. E. Moore*, 1942, pp. 636-37, 659.
10. George E. Moore, "Visual Sense-Data", in *British Philosophy in Mid-Century*, 1957, pp. 210-11.
11. George E. Moore, in *Contemporary British Philosophy*, II, p. 218.
12. George E. Moore, "Refutation of Idealism", *Philosophical Studies*, pp. 17-19, 169.
13. George E. Moore, *Philosophy of G. E. Moore*, 1942, pp. 655-58.
14. C. A. Mace ed., *British Philosophy in Mid-Century*, 1957, pp. 208, 211.

CHAPTER 11

1. This term is used by H. H. Price in his paper published in *Proc. Arist. Soc.*, 1945, p. 92.
2. H. J. Watts, *Sensory Basis of Structure of Knowledge*, London, 1925. Chapters XII to XV and XVIII to XX, discusses in great detail the integration of fragmentary sense-material into various spatial objects.
3. This is what Carnap calls "formal mode of speech" as against the "material modes of speech".
4. A detailed analysis of these constructions is undertaken by C. A. Fritz Jr. in *Bertrand Russell's Constructions of the External World*, 1952, Chapter IV, Parts I and II, pp. 141-79.
5. Bertrand Russell, *Our Knowledge of the External World*, p. 96.
6. Ibid., p. 100; also *Analysis of Mind*, pp. 100-102, in a slightly different context; he again shows that the same appearance is related to the thing and to the perspective.
7. H. H. Price, *Perception*, p. 218.
8. Ibid., p. 222.
9. Ibid., p. 266.
10. Ibid., p. 228.
11. Price names it "sensibilism" in *Proc. Arist. Soc.*, 1945, Suppl. Vol. In his Chairman's Remarks, he criticizes that Ewing does not do full justice to its difficulties. But Ewing discussed them fully in *Idealism*, 1934, much earlier than "Causal Arguments for Physical objects" which Price was criticizing.
12. A. C. Ewing, *Idealism*, pp. 357-60.

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CHAPTER 12

1. Alfred J. Ayer, *Philosophical Essays*, p. 132.
2. R. J. Hirst, *Problems of Perception*, p. 84.
3. Alfred J. Ayer, *Philosophical Essays*, pp. 150-53.
4. Alfred J. Ayer, *Foundations of Empirical Knowledge*, p. 239.
5. Alfred J. Ayer, *Philosophical Essays*, pp. 135-38; *Problems of Knowledge* (Pelican edition), p. 125.
6. Alfred J. Ayer, *Foundations of Empirical Knowledge*, p. 235.
7. Ibid., p. 241.
8. Ibid., p. 229.
9. R. J. Hirst, *Problems of Perception*, p. 89.
10. Alfred J. Ayer, *Problems of Knowledge* (Pelican edition), p. 132.
11. Ibid.
12. These do not apply to their author's final views.
13. Alfred J. Ayer, *Philosophical Essays*, p. 163; *Problems of Knowledge* (Pelican edition), p. 123.
14. Alfred J. Ayer, *Foundations of Empirical Knowledge*, pp. 247-49.
15. H. H. Price, *Perception*, pp. 291-93.
16. F. G. Stout, "Phenomenalism", *Proc. Arist. Soc.*, 1938-39, pp. 13-18.
17. I. Berlin, "Empirical Propositions", *Mind*, 1950, pp. 295ff.
18. Alfred J. Ayer, *Problems of Knowledge* (Pelican edition), p. 121.

CHAPTER 13

1. H. H. Price, *Perception*, pp. 86, 309. It should be distinguished from horizontal causality, viz. causal relation among physical objects.
2. Ibid., p. 142.
3. Ibid., pp. 180ff.
4. This explains G. Ryle's criticism of the theory, viz. that perception is not an end-state of a process. *Dilemmas*, 1954, Ch. VII.
5. Bertrand Russell, *Analysis of Matter*, p. 198.
6. H. H. Price, *Perception*, p. 70.
7. C. D. Broad, *Scientific Thought*, p. 490f.
8. Alfred J. Ayer, *Foundations of Empirical Knowledge*, p. 231; *Problems of Knowledge* (Pelican edition), p. 114; R. J. Hirst, *Problems of Perception*, p. 151. Stout's objection is a little different. On p. 238, *Mind and Matter*, he says that we cannot know that sense-data are effects of external causes.
9. C. D. Broad, *Scientific Thought*, p. 269.
10. Bertrand Russell, *Analysis of Matter*, pp. 200-06.

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CHAPTER 14

1. H. H. Price, *Perception*, pp. 279ff.
2. Ibid., pp. 246, 252.
3. The sense in which a family occupies space is not simple and straightforward; it means that a region is reserved for a family to exist in Pickwickian ways, when a percipient is present there.
4. C. D. Broad, *Scientific Thought*, p. 330.
5. C. D. Broad, *Mind and its Place in Nature*, p. 161. Such a theory has been suggested by Whitehead and N. K. Smith.
6. Ibid., p. 181.
7. Bertrand Russell in *Human Knowledge*, pp. 233-36, describes how this construction takes place.
8. Ibid., p. 221. In *Analysis of Matter*, pp. 258-59, 260-62, he holds a similar view.
9. Bertrand Russell, *Analysis of Matter*, pp. 259, 383; *An Outline of Philosophy*, 1927, p. 146; Paul A. Schillp, ed., *Philosophy of Bertrand Russell*, 1949, pp. 705, 706.
10. Bertrand Russell, *Human Knowledge*, pp. 220, 225.
11. Ibid., p. 254. "What is Mind ?" *Jl. of Phil.*, 1958, p. 12.
12. Ibid., pp. 220, 245.
13. R. W. Brian, *Mind, Perception and Science*, pp. 59-61; Smythies, *Analysis of Perception*, pp. 38-39; W. Grey Walters, *Perspectives in Neuropsychiatry*, ed. D. Richter, 1950, p. 77.
14. Bertrand Russell, *Analysis of Matter*, p. 270.
15. The actual state of affairs in the universe that the physicists assert to exist, and its implications and relevance for philosophy and relation to our experience cannot be fully discussed here. A. S. Eddington describes the nature of the physical universe and its relation to our sense-experience in the *Nature of the Physical World*, 1928; *The Philosophy of Physical Science*, 1939; *Science and the Unseen World*, 1931; J. Jean, *Philosophy of Physics of the Universe Around us*; Bertrand Russell, *A.B.C. of Relativity*; *Physics and Experience*; A. N. Whitehead's *Essays in Science and Philosophy* and *An Enquiry concerning the Principles of Natural Knowledge*, Part II. Criticisms will be found in S. Stebbing's book *Philosophy and Physicists*, 1937; H. Levy's *Universe of Science*, 1932.

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CHAPTER 15

1. The reference in the text is to the numbers of the paragraphs in *Philosophical Investigations*, 1954 ed.
2. P. F. Strawson, "Critical Notice, Philosophical Investigation", *Mind*, 1954, pp. 70-99.
3. C. Wellman, " Wittgenstein and the Egocentric Predicament ", *Mind*, 1959, pp. 223-33.
4. M. Black, *Problems of Analysis*, p. 61.
5. G. Ryle, *Concept of Mind*, 1949. Ch. VII, p. 203,
6. Alfred J. Ayer, *Problems of Knowledge* (Penguin edition), p. 97.
7. Alfred J. Ayer, *Foundations of Empirical Knowledge*, pp. 70-72.
8. George E. Moore, *Philosophical Studies*, p. 251; "Defence of Common Sense", *Contemporary British Philosophy* II; p. 218. *Philosophy of G. E. Moore*, pp. 658-.59
9. George E. Moore, *Philosophy of G. E. Moore*, p. 643.
10. George E. Moore, *Philosophical Studies*, pp. 180-81; *Some Main Problems of Philosophy*, p. 31; "Are Materials of Sense Affections of Mind", *Arist. Soc. Proc.*, 1916-17.
11. Alfred J. Ayer, *Problems of Knowledge* (Penguin edition), p. 110.
12. This is R. M. Chisholm's version of the "sense-datum fallacy", *Perceiving*, pp. 155ff.
13. A. R. White, *G. E. Moore*, p. 187.
14. Alfred J. Ayer, *Foundations of Empirical Knowledge*, p. 27; *Problems of Knowledge* (Penguin edition), p. 85.
15. B. L. Whorf, *Four Articles on Metalinguistics*, Foreign Service Institute Dept. of Washington, 1950, pp. 4-23.

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